IN THE

Supreme Court of the United States

OCTOBER TERM, 1974

No. 74-147

SAUQUOIT FIBERS COMPANY, INC., *Petitioner,*

v.

LEESONA CORPORATION, THE PERMATWIST COMPANY, WARREN A. SEEM, FREDERICK D. TECCE, NICHOLAS J. STODDARD AND HAROLD J. BERGER, *Respondents.*

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

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PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

Petitioner prays that a writ of certiorari issue to review the judgment of the United States Court of Appeals for the Fifth Circuit entered in the above-entitled case on July 29, 1974.

CITATIONS TO OPINIONS BELOW

The opinion of the District Court is printed in the Appendix hereto (App. A-31) and is reported at 360 F.Supp. 74 (S.D. Fla. 1973). The opinion of the Court of Appeals is printed in the Appendix hereto (App. A-1) and is reported at 498 F.2d 271 (5th Cir. 1974).

JURISDICTION

The judgment of the Court of Appeals was entered on July 29, 1974 (App. A-30). The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

QUESTIONS PRESENTED

1. Whether any experimental use exception to the public use and/or on sale bar to patent validity under 35 U.S.C. § 102(b) is applicable where more than one year prior to the filing of the patent application, the inventor himself has demonstrated his invention in commercial production to operate in its intended manner to produce highly satisfactory results and has placed the invention in public use and on sale for purposes of substantial trade and profit.

2. Whether a trial court may grant summary judgment that patents are invalid under 35 U.S.C. § 102(b) where

(a) Undisputed, objective, documentary evidence including sworn written statements of the inventors and a written contemporaneous license and purchase agreement signed by the inventors establish that more than one year prior to the filing of the patent application, the inventions were demonstrated in commercial production to operate in their intended manner to produce highly satisfactory results and in that form were placed in public use and on sale for purposes of substantial trade and profit; and

(b) The trial court finds as a matter of law that conclusionary, self-serving testimony of the inventors and their associates given many years after the fact of an alleged experimental intent has no probative force when weighed against the overwhelming objective evidence to the contrary.

STATUTE INVOLVED

The statute involved is 35 U.S.C. § 102(b) which reads as follows:

> **"§ 102. Conditions for patentability; novelty and loss of right to patent**
>
> A person shall be entitled to a patent unless—
>
> * * * *
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or"

STATEMENT OF THE CASE

The present case is a part of *In re Yarn Processing Patent Validity Litigation*, MDL Docket No. 82, a consolidated proceeding in the United States District Court for the Southern District of Florida. The consolidated action includes over 45 cases involving more than 60 parties. Among the parties are most of the major companies of the textile industry. The patents in suit are Stoddard and Seem United States Patents 2,803,105, 2,803,108 and 2,803,109. The patents relate to the texturizing of thermoplastic yarn such as nylon by the "false twist" technique. The patents were licensed to more than 60 entities, most of whom are parties to the action. The alleged damages run into many millions of dollars. Thus, the present action represents one of the most important patent cases in the United States today.

This particular case was filed in the United States District Court for the Eastern District of Pennsylvania. The complaint seeks, *inter alia*, a declaratory judgment that the three Stoddard and Seem patents

are invalid and not infringed by Petitioner, Sauquoit Fibers Company. Jurisdiction of the District Court was based upon 28 U.S.C. §§ 1338(a) and 2201 because the case was one arising under the patent laws and sought a declaratory judgment.

On April 22, 1971, petitioner Sauquoit moved for summary judgment in the Eastern District of Pennsylvania that the patents are invalid under 35 U.S.C. § 102(b) because the inventions were in public use and on sale more than one year before the filing of the patent applicatons. Before any decision was rendered on the motion, the case was transferred to the Southern District of Florida for consolidated pre-trial proceedings pursuant to 28 U.S.C. § 1407 where it became a part of MDL Docket No. 82.

Subsequent to transfer, other parties to the consolidated proceeding filed a companion motion for summary judgment.

The undisputed facts upon which the motions were based are summarized as follows:

(1) More than one year before the filing on January 4, 1954 of the applications for the patents in suit, the inventors Stoddard and Seem in conjunction with associates constructed and operated a 220 spindle false twist machine which embodied the apparatus and was operated in accordance with the method of each invention claimed by the patents in suit.[1] (R. 20-24, 72, 210, 212-14, 245, 257-58, 1353-56, 1365-66, 1465-67, App. A-35, 48, 49.) The 1952 machine was not the inventors' first machine. Other machines were built in 1947 and 1950 which have been alleged by the inventors and Lee-

[1] References to the record (R. —) denote the appendix before the Court of Appeals, a copy of which is submitted with this Petition.

sona to be complete or commercial embodiments of the inventions. (R. 254-56, App. A-2, 34, 35, 42, 46, 47.)

(2) The inventors entered into negotiations with Synfoam [2] and on May 20, 1952, demonstrated the 220 spindle machine and its method of operation to representatives of Synfoam (R. 247, 93-94, 365, 393, App. A-3, 35, 48.) In the words of Mr. Seem, one of the coinventors, the purpose of the demonstration was to "work out a business relation." (R. 93-94). At that time the machine had been adequately tested and proven so that it *operated in its intended manner and performed satisfactorily to produce acceptable, permanently crimped nylon.* (R. 364, 393-94, 359, 1355, 1366.) It stands admitted that the machine at that time was a full scale commercial exemplification of the inventions. (R. 258, App. A-35, 48, 49.) The inventors and Synfoam confirmed by a mutual, written, contemporaneous contract that at the May 1952 demonstration the 220 spindle machine was "operating in *commercial* production".[3] (R. 365, 393.)

(3) On December 15, 1952, the inventors entered into a written agreement with Synfoam which formalized the placing of the earlier demonstrated machine and method on sale. (R. 364-394, App. A-69.) The agreement granted Synfoam an exclusive license under the inventions (R. 366-67, 375) and provided for the sale to Synfoam of embodiments of the inventions and specifically required the delivery to Synfoam of 1000 such embodiments as soon as practicable. (R. 367, 368.) In addition to the cost of the machines, the writ-

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[2] The term "Synfoam" denotes either or both of the related companies Synthetic Yarns, Inc., and Synfoam Yarns, Inc.

[3] Unless otherwise indicated all emphasis throughout this Petition is supplied.

ten agreement also required Synfoam to pay to the inventors and their associates one-half of the net profits of Synfoam from the commercial processing of yarn or the sale of yarn processed on the machines thus purchased. (R. 368-369.) A substantial purpose of the agreement was "profit". (R. 773-74.) One of the co-owners of the invention testified that the "focal point" and "main thing" in the negotiation and agreement was "profit." (R. 774). The word "profit" appears at least nineteen times in paragraph 7 alone of the contract. (R. 368).

(4) The comprehensive Synfoam agreement of December 15, 1952 (R. 364-394) expressly sets forth the entire agreement between the parties (R. 391-92) and contains *not one word* concerning any experimental purpose in the purchase and license arrangement. Nevertheless, while not disputing the admitted commercial purpose, respondents advanced to the District Court an argument that the agreement had a *simultaneous* experimental purpose. (R. 1465-67.) In support of such contention, Leesona submitted conclusionary self-serving testimony of the inventors and their associates given many years after the fact and primarily in depositions in this litigation, that the inventors' arrangement with Synfoam had an alleged experimental purpose.

The District Court ruled that the material facts advanced by the moving parties established that the patents were invalid as a matter of law and that such facts were not controverted by Leesona.[4] The Court of Ap-

[4] The District Court found that the fourteen paragraphs of undisputed material fact submitted by the moving parties under local rule 10(J)(2) had not been directly controverted by the patentee parties (App. A-44).

peals for the Fifth Circuit reversed, applying law which is in square conflict with applicable legal tests in effect in the decisions of other circuits and this Court.

First, the Court of Appeals rejected the law of the Courts of Appeals of the Sixth, Seventh and Ninth Circuits that once a *substantial* commercial or profit motive for the public use or on sale is established, the experimental use exception simply does not apply because the patent monopoly thus would be extended by the commercial use. (App. A-28, 29).

Secondly, the Court of Appeals held that despite the overwhelming objective evidence to the contrary, the belated conclusionary testimony of the inventors of an experimental intent must be given a probative effect on a decision for summary judgment. (App. A-28.) The First and Ninth Circuit Courts of Appeals hold squarely to the contrary.

Thirdly, the Court of Appeals held that despite the fact that the contract of sale between the inventors and Synfoam expressly sets forth the entire agreement between the parties, and makes no express or implied mention of any experimental purpose, the inventors later conclusionary, parol testimony of an experimental intent was sufficient to prevent summary judgment. The Court acknowledged the square conflict with the Ninth Circuit Court of Appeals which holds that in such instances the plain language of the contract is controlling as a matter of law for purposes of summary judgment.(App. A-26, 27).

REASONS FOR GRANTING THE WRIT

1. To Resolve the Conflict Between the Courts of Appeals of the Several Circuits as to the Applicability of the Experimental Use Exception Where a Completed Invention has been Placed in Public Use and On Sale for a Substantial Commercial or Profit Purpose

The Court of Appeals below held that:

> "When commercialization of the invention is alleged, it requires a *weighing of two motives*—experimentation and profit—that may coexist, because the experimental use exception applies if the experimental motive *predominates*.[7]

[7] Some cases have loosely said that the experimental use exception applies only if experimentation was the inventor's *sole* (emphasis by the Court) motivation. Dart Industries, Inc. v. E. I. DuPont De Nemours and Co., 7 Cir. 1973, 489 F.2d 1359; Minnesota Mining and Manufacturing Co. v. Kent Industries, Inc., 6 Cir. 1969, 409 F.2d 99. With deference, we must say that this misstates the law. The Supreme Court has made it clear that the experimental use exception applies, despite the presence of a profit motive, if *experimentation is the inventor's dominant purpose*, and this rule has never been directly questioned. Smith & Griggs Manufacturing Co. v. Sprague, 1887, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141; Watson v. Allen, 1958, 103 U.S. App. D.C. 5, 254 F.2d 342; Lanham v. Southern Bakeries Co., 5 Cir. 1961, 295 F.2d 816." (App. A-28, 29.)

In addition to the cases cited by the Court below as supporting its "weighing of two motives" test, *Robine v. Apco, Inc.*, 386 F.2d 267, 269-70 (2d Cir. 1967) contains similar language.

In direct conflict with the "weighing of two motives" test, *Dart Industries, Inc. v. E. I. DuPont De Nemours and Co.*, 498 F.2d 1359, 1366 (7th Cir. 1973), cited by the Court below, held:

> "The experimental use exception recognizes the necessity for testing of an invention under circum-

stances which would ordinarily be considered a public use. See Elizabeth v. American Nicholson Pavement Co., 97 U.S. 126, 24 L.Ed. 1000. But the exception is narrowly construed, and the use must be *solely* (Emphasis by the Court) for experimental purposes. 'A use for experimental purposes is not a public use "if it is conducted in good faith for the purpose of testing the qua ities of the invention and for *no other purpose not naturally incident to that.*" Walker, Patents, Deller's Edition 347.' Hobbs v. Wisconsin Power & Light Co., 250 F.2d 100, 108 (7th Cir. 1957). See also Egbert v. Lippmann, 104 U.S. 333, 336, 26 L.Ed. 755; George R. Churchill Co. v. American Buff Co., 365 F.2d 129, 134 (7th Cir. 1966); Cline Electric Co. v. Kohler, 27 F.2d 638, 641 (7th Cir. 1928). 'A reasonable period of experimentation wherein the inventor may perfect what he has conceived has long been acknowledged as an exception to the requirement of seasonable disclosure. But this exception must be recognized as such; it must be so limited as not to interfere with the effectuation of the policy underlying the general rule of early disclosure. *An inventor may not be permitted to use a period of experimentation as a competitive tool.*' Kochring Co. v. National Automatic Tool Co., 362 F.2d 100, 103 (7th Cir. 1966)."

Other cases in the Ninth, Seventh, and Sixth Circuits are similarly in conflict with the "weighing of two motives" test. In the recent case of *Pickering* v. *Holman*, 459 F.2d 403, 406 (9th Cir. 1972), cited by the District Court below (App. A-39, 49), the Court, after stating "for purposes of this appeal . . . we assume that the patentees *profits were merely incidental to experimentation*", held:

> "A use which is primarily experimental and no more than *incidentally* for trade or profit is not a

> public use. E. G. Smith & Griggs Mfg. Co. v. Sprague, 123 U.S. 249, 88 S.Ct. 122, 31 L.Ed. 141 (1887). This is the so-called 'experimental use exception'. Viewed in light of the policy underlying the public use provision, however, it is no exception at all. A bona fide experimental use involves *no commercial exploitation.* 'The use [of an invention] *ceases to be experimental* when the motivation of the inventor is to *exploit the invention* and gain a competitive advantage over others.' Sole Cup Co. v. Paper Mach. Corp., D.C., 240 F. Supp. 126, 131, quoted in Super Mold Corp. v. Clapp's Equip. Div., Inc. (9th Cir. 1968), 397 F.2d 932, 933."

In *Hobbs* v. *Wisconsin Power & Light Co.,* 250 F.2d 100, 108 (7th Cir. 1957) the Court said:

> "A use for experimental purposes is not public use 'if it is conducted in good faith for the purpose of testing the qualities of the invention and for *no other purpose not naturally incident to that.*'"

The same conflict with the decision below is expressed in *Cloud* v. *Standard Packaging Corp.,* 376 F.2d 384, 390 (7th Cir. 1967); *George R. Churchill Co.* v. *American Buff Co.,* 365 F.2d 129, 134 (7th Cir. 1966); *Minnesota Mining & Mfg. Co.* v. *Kent Industries, Inc.,* 274 F.Supp. 993, 997 (E.D. Mich. 1967), aff'd. 409 F.2d 99 (7th Cir. 1969); *Amphenol Corp.* v. *General Time Corp.,* 275 F.Supp. 903, 905 (N.D. Ill. 1967), aff'd. 397 F.2d 431 (7th Cir. 1968); *Cataphote Corp.* v. *De Soto Chemical Coating, Inc.,* 356 F.2d 24, 26 (9th Cir. 1966); *Roller Bearing Company of America* v. *Bearing, Inc.,* 322 F.Supp. 703, 706 (E.D. Pa. 1971).

The nature of the conflict is clear. Some courts, including the Court below, hold that where there

coexists substantial commercial and experimental purposes underlying the public use or placing on sale of an invention, the controlling question is which of the two purposes is the *greater*. The opposing cases hold that despite an experimental purpose, the bar to patentability attaches if there is any *substantial* commercial or profit purpose, i.e., one which is more than incidental. The crucial question is whether an inventor should be permitted to enlarge his patent monopoly by any period of *substantial* commercialization of the invention more than one year before the filing of his patent application, despite the existence of a simultaneous purpose to conduct experiments. Highly cogent is the frequently quoted statement of the Seventh Circuit in the *Kochring* case that "an inventor may not be permitted to use a period of experimentation as a competitive tool." 362 F.2d 100, 103 (7th Cir. 1966.)

2. To Resolve the Conflict Between the Decision Below and the Decisions of This Court

A similar condemnation of the extension of the patent monopoly by a use for profit is set forth by this Court in *Elizabeth* v. *American Nicholson Pavement Co.*, 97 U.S. 126, 137, 24 L.Ed. 1000, 1005 (1878) where the Court said:

> "An inventor acquires an undue advantage over the public by delaying to take out a patent, inasmuch as he thereby *preserves the monopoly to himself for a longer period* than is allowed . . . Any attempt to use it *for a profit*, and not by way of experiment, for a longer period than two years before the application, would deprive the inventor of his right to a patent."

Experimental use in the *Elizabeth* case involved *no* profit motive whatever. Accordingly, there was no

extension of the monopoly by the period of experimental use.

Smith & Griggs Mfg. Co. v. *Sprague*, 123 U.S. 249, 31 L.Ed. 141 (1887) was misinterpreted by the Court below as authority for the proposition that substantial commercial and experimental purposes should be weighed against each other to determine which is greater in deciding whether the experimental use exception applies. In that case, the Court said:

> "A use by the inventor, for the purpose of testing the machine, in order by experiment to devise additional means for perfecting the success of its operation is admissible; and where, *as incident to such use*, the product of its operating is disposed of by sale, such profit from its use does not change its character; but where the use is mainly for the purposes of trade and profit, and the experiment is merely incidental to that, the principal and not the incident must give character to the use. The thing implied as excepted out of the prohibition of the statute is a use which may be properly characterized as substantially for purposes of experiment. Where the *substantial use is not for that purpose, but is otherwise public*, and for more than two years prior to the application, it comes within the prohibition." 123 U.S. at 256, 31 L.Ed. at 194.

Smith & Griggs condemns as an extension of the monopoly not only a "primary" commercial purpose but pointedly and in express terms a *"substantial"* commercial purpose. In context it is clear that the only permissible commercial purpose is one which is *de minimis*—merely an *incident* of the experimentation. Any *substantial* trade or profit would control over any coexisting experimental intent even if the latter is also substantial or even primary.

This Court's own interpretation of its decisions in the *Elizabeth* and *Smith & Griggs* cases demonstrates the error of the interpretation by the Court of Appeals of *Smith & Griggs*. Thus, in *International Tooth Crown Company* v. *Gaylord*, 140 U.S. 55, 63, 35 L.Ed. 347, 350 (1891), the Court, citing *Smith & Griggs*, conditioned the exception upon the activities being "*purely* experimental" with "*no* compensation" being permitted. The Court said:

> ". . . Granting that, under the rule laid down in *Elizabeth* v. *Nicholson Pave. Co.*, 97 U.S. 126 [24: 1000], a patentee has a right to test the durability of his invention as one of the elements of its success, it is manifest that his experiments to that end should extend *no farther, either in time or in the number of cases in which it is used, than is reasonably necessary for that purpose* . . . . As the test was *purely experimental* and he received *no compensation* for the use of his pavement, it was held not to constitute an abandonment."

Similarly in *Egbert* v. *Lippmann*, 104 U.S. 333, 336, 26 L.Ed. 755, 756 (1881) the Court said:

> "So, on the other hand, a use necessarily open to public view, if made in good faith *solely* to test the qualities of the invention, and for the purpose of experiment, is not a public use within the meaning of the patent law. *Elizabeth* v. *Pavement Co.*, 97 U. S. 126 [XXIV., 1000]; *Shaw* v. *Cooper*, 7 Pet., 292."

And in *Electric Storage Battery Co.* v. *Shimadzu*, 307 U.S. 5, 20, 83 L.Ed. 1071, 1081 (1938) the Court said:

> "A *mere* experimental use is not the public use defined by the Act, but a single use *for profit*, not purposely hidden, is such. The ordinary use of a

> machine or the practice of a process in a factory in the *usual course of producing articles for commercial purposes is a public use.*"

A patent is a *limited* statutory monopoly which affects the stream of commerce for seventeen years plus the time of pendency of the application. Congress in its wisdom permits an additional one year period of commercial use *prior* to the filing of the application. 35 U.S.C. § 102(b). At the time of the *Elizabeth* and *Smith & Griggs* decisions, the grace period was two years. In reducing it to one year in 1939 (C.45§ 1, 53 Stat. 1212), congress evidenced a legislative intent to *narrow* the permitted commercial use and to encourage earlier filing for a patent thereafter. The extension of the patent monopoly inherent in any *substantial* commercial use before the one year period would run counter to the intent of Congress.[5] The experimental use *exception* must be strictly and narrowly confined to circumstances where commercial use is no more than *incidental* or *insubstantial* and does not effect a *de facto* extension of the monopoly.

3. To Resolve the Conflict Between Circuit Courts of Appeals Regarding the Use of the Summary Judgment Procedure in Public Use and On Sale Cases

The summary judgment procedure provided by Rule 56 of the Federal Rules of Civil Procedure wisely confers upon trial courts the authority to dispose of legal issues where material facts are not in dispute. Summary judgment is freely considered and frequently granted in Section 102(b) cases involving public use

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[5] The Sherman Act of 1890, enacted subsequent to *Elizabeth* and *Smith & Griggs* is yet another indication of congressional intent to limit strictly the scope of any commercial monopoly.

and on sale issues. For example, summary judgment was granted on the ground of public use or on sale in *Strong* v. *General Electric Co.*, 434 F.2d 1042, 1047 (5th Cir. 1970); *Robbins Co.* v. *Lawrence Mfg. Co.*, 482 F.2d 426, (9th Cir. 1973); *Atlas* v. *Eastern Air Lines, Inc.*, 311 F.2d 156 (1st Cir. 1962); *Super Mold Corp.* v. *Clapp's Equipment Division, Inc.*, 397 F.2d 932 (9th Cir. 1968); *Henderson* v. *A. C. Spark Plug*, 366 F.2d 389 (9th Cir. 1966); *Soffron* v. *S. W. Lovell & Co.*, 246 F.2d 769 (1st Cir. 1957); *Magee* v. *Coca-Cola Co.*, 232 F.2d 596 (7th Cir. 1956); *Kraus* v. *Emhart Corp.*, 320 F.Supp. 60 (N.D. Cal. 1970); *Roller Bearing Co. of America* v. *Bearing, Inc.*, 322 F.Supp. 703 (E.D. Pa. 1971); *Samuel J. Miller & Co.* v. *A. Schreter & Sons Co.*, 246 F.Supp. 737 (D. Md. 1965); *aff'd.* 374 F.2d 510 (4th Cir. 1967).

Especially appropriate for summary judgment are cases where the "public use" and "on sale" activities, as here, are those of the inventors themselves in respect to the very invention later patented. Thus, as in this case, any dispute over identity of invention is removed.

The decision of the Court below would effectively foreclose use of summary judgment in public use and on sale cases where the patentees advance the standard defense of an alleged experimental intent. However, the law is clear that the patentee must demonstrate by detailed proofs the specific facts upon which the exception is predicated. In practically every instance, there are improvements and refinements *after* an invention is complete as opposed to legitimate experimentation requisite to the completion of the invention. Patentees faced with a public use or on sale charge commonly indulge in a semantic excursion using such general, self-serving terms as "experiment", "test", or "de-

velop" in an attempt to transform normal activities in refining and improving a completed invention into the experimental use exception. In such circumstances, to deny summary judgment merely because the inventors say in affidavits or oral testimony years after the fact that the use was for "experimental purposes" effectively defeats the salutary purpose of the summary judgment procedure. Thus, in *Smith & Griggs Mfg. Co.* v. *Sprague*, 123 U.S. 249, 264-65, 31 L.Ed. 141, 146 (1887), this Court said:

> "In considering the evidence as to the alleged prior use . . . and where the defense is met only by the allegation that the use . . . was for the purpose of perfecting an incomplete invention by tests and experiments, the proof on the part of the patentee, the period covered by the use having been clearly established, should be *full, unequivocal, and convincing.*"
>
> "The testimony of the patentee seems to be indefinite and vague. The question whether . . . he was experimenting for its improvement, put to him by his counsel, suggested its own answer . . . . He gives no account of the dates of any such experiments, nor any particulars respecting them. He does not say whether more than one mode of overcoming the difficulties experienced was suggested and tried, or not; nor, if more than one device was attempted, what they were. The statements are meager and bald, and quite insufficient to satisfy us that the problem of perfecting the machine, in the particulars in which it was proved to be deficient, was one that was exercising the ingenuity and inventive faculty of the patentee continuously . . ."

The principles expressed in the *Smith & Griggs* case are squarely applicable to summary judgment situations as was held in *Super Mold Corp.* v. *Clapp's*

Equipment Division, Inc., 397 F.2d 932, 934-35 (9th Cir. 1968). In affirming summary judgment the Court said:

> "Super Mold admits the facts as recited above, but it claims, notwithstanding, that *Fike's testimony in his deposition* that '[t]he sale and use of my tread aligners to Sears was a good faith use for experimental purposes and not a public use' created a genuine issue of a material fact. We cannot agree . . . .
>
> * * * * *
>
> "We have carefully reviewed the affidavits and conclude, as did the District Court, that no genuine issue of fact was presented. The record as a whole compels determination that the purpose of Fike's course of conduct was *commercial exploitation* of his tread aligner . . . . Fike's testimony concerning his subjective intent has *no probative force* when weighed against the *overwhelming objective evidence to the contrary.*"

The District Court below quoted the rule in the *Super Mold* case and applied it to the facts of this case, saying:

> "The evidence relied upon by Leesona is really no evidence at all—it amounts to nothing more than citation to a law review note . . . and the recent deposition testimony of the Permatwist partners and their associates." (App. A-54)

The rule of the *Super Mold* case is particularly applicable where there is a contemporaneous written agreement between the inventors and the prospective purchaser setting forth an agreement of sale or use of an invention. Thus, in the recent case of *Robbins Co.* v. *Lawrence Mfg. Co.*, 482 F.2d 426, 433 (9th Cir. 1973),

the Court quoted the above language from the *Super Mold* case and stated that:

> "A sale or an offering for sale *precludes any inquiry* into the experimental nature of the sale *unless* the contract of sale or the offering for sale contains an *express or clearly implied condition* that the sale or offering is made primarily for experimental use."

Cases to the same effect as the *Super Mold* and *Robbins* case include: *Proler Steel Corp.* v. *Luria Brothers & Co.*, 417 F.2d 272, 273-74 (9th Cir. 1969); *Henderson* v. *A. C. Spark Plug*, 366 F.2d 389, 393 (9th Cir. 1966); *Atlas* v. *Eastern Air Lines, Inc.*, 311 F.2d 156, 161 (1st Cir. 1962); *Roller Bearing Co. of America* v. *Bearing, Inc.*, 322 F.Supp. 703, 708 (E.D. Pa. 1971); *Kraus* v. *Emhart Corp.*, 320 F.Supp. 60, 63-64 (N.D. Cal. 1970).

The District Court below expressly followed the rule of the *Super Mold* case in holding that the belated self-serving testimony of the inventors and their associates in the present situation has no probative effect. The Court of Appeals held that in following the *Super Mold* rule:

> "The court violated the rule that the trial judge should be very careful . . . to avoid assessing the probative value of *any evidence* presented to it, for this would be an unwarranted extension of the summary judgment device." (App. A-28)

The Court of Appeals below also rejected in terms the Ninth Circuit *Robbins'* rule that:

> "a sale or offering for sale precludes any inquiry into the experimental nature of the sale unless the contract of sale or the offering for sale contains

an express or clearly implied condition that the sale or offering is being made primarily for experimental use." (App. A-26)

In acknowledging its square conflict with the Ninth Circuit rule, the Court below stated:

"We regard the rule as excessively rigid, and we *expressly decline to adopt it*. An inventor should be free to introduce evidence of a bona fide experimental intent even if that intent is not indicated within a contract of sale or offering." (App. A-27)

4. The Questions Presented by this Petition are of Major Importance in the Administration of the Patent Laws

The lower federal courts are in hopeless conflict as to the proper application of the experimental use exception to the law of public use and on sale of inventions as barring patentability. The large number of recent cases considering the point, many of them on motions for summary judgment, evidences the frequency with which the problem arises and demonstrates the need for uniformity of treatment. An authoritative ruling on the question by this Court clarifying its holdings in the *Elizabeth* and *Smith & Griggs* cases is plainly in the public interest and is required to insure an orderly administration of justice.

5. The Issues Presented are Fundamental to the Further Conduct of the Many Consolidated Cases Below

Although the judgment of the Court below is not a final one, it is appropriate for review at this stage since the public use and on sale issue is fundamental to the further conduct of the case. *Lawson* v. *Domestic and Foreign Commerce Corp.*, 337 U.S. 682, 685, 93 L.Ed. 1628, 1633 (1949); *Land* v. *Dollar*, 330 U.S. 731, 734, 91

L.Ed. 1214 (1947); *U. S.* v. *General Motors Corp.*, 323 U.S. 373, 377, 89 L.Ed. 311, 318 (1945).

Significantly, the many cases in the consolidated proceeding below literally involve the entire textile industry. The future conduct of those cases is directly affected by the erroneous decision of the Court of Appeals.

Most significantly, the consolidated proceeding is for *pre-trial* purposes only. As matters now stand, the cases will be remanded to the home circuits for trial and the *identical* issue of the validity of the three patents in suit will be tried in at least three different circuits, namely the Second, Third and Fifth.[6] A related on sale issue will be involved in the Fourth Circuit.[7]

In the present state of conflicting decisions, it is indeed likely that two or more of these circuits will disagree on the applicable law. Manifestly, resolution *now* by this Court will preclude such conflict and insure even handed and orderly administration of justice.

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[6] *Kayser-Roth Corporation* et al. v. *Leesona Corporation* (E.D. N.Y.); *Sauquoit Fibers Company* v. *Leesona Corporation*, et al., (E.D.Pa.); *Celanese Corporation*, et al. v. *Leesona Corporation*, et al. (S.D.Fla.) all include the identical issue and are a part of M.D.L Docket No. 82, the consolidated proceeding below.

[7] Universal Textured Yarns Inc. v. Leesona Corporation et al. (M.D.N.C.)

CONCLUSION

For the foregoing reasons this Petition for a Writ of Certiorari should be granted.

Respectfully submitted,

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APPENDIX

UNITED STATES COURT OF APPEALS,
FIFTH CIRCUIT

IN RE YARN PROCESSING PATENT VALIDITY LITIGATION.

SAUQUOIT FIBERS COMPANY, *Plaintiff-Appellee,*

v.

LEESONA CORPORATION ET AL., *Defendants-Appellants.*

KAYSER-ROTH CORPORATION (in its own name and d/b/a Kayser-Roth Hosiery Company and Kayser-Roth Hosiery Co., Inc.), *Plaintiff-Appellee,*

v.

LEESONA CORPORATION, *Defendant-Appellant.*

LEESONA CORPORATION, *Plaintiff-Appellant,*

v.

THE DUPLAN CORPORATION ET AL., *Defendants-Appellees.*

No. 73-2420.

July 29, 1974

Appeals from the United States District Court for the Southern District of Florida.

Before JONES, Senior Circuit Judge, THORNBERRY and COLEMAN, Circuit Judges.

THORNBERRY, Circuit Judge:

The principal issue in this consolidated litigation is the validity of U.S. Patents numbered 2,803,105, 2,803,108 and 2,803,109, collectively called the "false twist" or "single heater" patents, which are presently owned by Leesona. The patents disclose both an apparatus and an efficient, economical means of texturizing synthetic thermoplastic yarns. The teachings of the patents laid the technological foundation for the development of double-knit fabrics. On a motion for summary judgment the district court, 360 F.Supp. 74, held the patents invalid. We find that there

existed genuine issues of material fact which should have precluded summary judgment and therefore reverse.

The applications for these patents culminated many years of work on the part of the inventors, Nicholas J. Stoddard and Warren A. Seem. The men had extensive experience in the throwing industry, which is the business of processing yarns consisting of continuous filament fibers. They conducted their first joint experiments in the mid-1930's, when Stoddard was working under Seem at the Georgetown Silk Company. They were separated in 1938 by Stoddard's promotion and transfer to another plant, although they continued to communicate. They were reunited in Philadelphia in 1944, where they resumed their experiments and formed a loose partnership between themselves as inventors and two others who acted as financiers, Fred Tecce and Harold Berger. This loose arrangement was later formalized as the Permatwist Company, a partnership registered to do business in Pennsylvania.

With the financial support of Tecce and Berger, the inventors were able to construct and operate two successive bench models in 1944 and 1947. Experimentation with the latter model continued for several years. Then in 1950 Berger and Tecce purchased a throwing mill called Marionette Mills in South Coatsville, Pennsylvania, and the inventors moved their equipment from their basements to an enclosed space in the Marionette Mills plant. Seem and Stoddard then borrowed a forty-spindle demonstration model Fletcher uptwister, moved it to the plant, and converted ten of the spindle positions to single heater false twisters, completing the conversion in July, 1950. They experimented with this model until November, 1950, when they restored it to its original condition and returned it to its owner.

Based on their experience with the 1950 model, the Permatwist partners decided to build eight full-sized

machines and operate them in a basement that was to be dug under the Marionette Mills plant. When it developed that sufficient supplies of nylon yarn would not be available, the partners decided to build only one machine instead. In early 1951 they began converting a 220-spindle Atwood uptwister, completing the job early in 1952. The machine was installed in the Marionette Mills basement and operated in secret.

On May 20, 1952, four representatives of Synfoam Yarns, Inc., visited the Marionette Mills plant and, after signing agreements not to divulge what they saw, were shown the 220-spindle machine in operation. After a few months of negotiations, Permatwist and Synfoam entered into an agreement on December 15, 1952, granting Synfoam a license to use the false twist process. More than a year later, on January 4, 1954, Seem and Stoddard filed applications for the patents in issue. On December 14, 1954, Leesona acquired the patent applications from the Permatwist Company, and the patents themselves issued on August 20, 1957.

The Four Phase Model

The points of American and Canadian patent law presented here are not altogether unambiguous. As an invention passes through different stages of development, from initial concept through patenting, the legal rights and duties of the inventor change. Although there exist legal terms of art to describe the various phases in the chronological development of an invention, their usefulness for analysis has been diminished both by their somewhat inconsistent application in the cases and by the secondary meanings and connotations they have acquired through long usage. Since we must not only analyze the American law but also compare it to Canadian, we find it useful to start by establishing a simple four phase model generally describing, in nonlegal terms, the relevant steps in the

development of a typical invention.[1] We stress that we use this model for heuristic purposes only: we do not intend to create more legal doctrine but only to analyze existing doctrine as clearly as possible.

The earliest phase in the development of any invention is its mental conceptualization by the inventor, the time when the idea first dawns. This is typically followed in short order by the second phase, in which the inventor attempts to embody his idea in a working model or prototype. Phase two ends when he has succeeded in rendering his idea a reality by constructing a working model that substantially embodies the claims later to be patented. Then begins the third phase, in which the inventor experiments with his model so as to satisfy himself that it needs no further refinement and to prove its fitness for the intended purpose. Once this is completed the inventor is free to initiate the last phase of concern to us, in which he secures a limited legal monopoly to himself under the patent laws. This phase is initiated by his application for the patent and terminates when the patent is finally issued. This is the general factual context of the legal issues before us.

The Canadian Litigation

The Canadian counterparts of the patents under review were attacked in the Exchequer Court of Canada by Ernest Scragg & Sons Limited. Scragg sought a declaration that Leesona's Canadian patents were invalid and also a declaration that Scragg's "Crimp Spin" machine and its use in the processing of textile yarns did not infringe any of Leesona's rights under the patents. Leesona denied

[1] Our model describes typical steps for an invention that is *actually* reduced to practice, since that is the case before us. It does not apply to *constructive* reduction to practice. *See* The Legally Complete Invention—A Study of the Requirement of Testing to Establish an Actual Reduction to Practice, 33 Geo.Wash.L. Rev. 740 (1965); New Guidelines for Applying the On Sale Bar to Patentability, 24 Stan.L.Rev. 730 (1972).

Scragg's claims and counterclaimed for a declaration of validity and infringement, an injunction restraining the infringement and damages or an account of profits.

That suit was tried before President Thorson of the Exchequer Court. His approach was first to determine the precise extent of the monopoly granted by the patents, a task which involved a careful construction of their claims. He explained the principles of construction of the claims of a Canadian patent as follows.

> It is a cardinal principle that the claims in a patent should be construed in the light of the common knowledge which a person skilled in the art to which the invention defined in the claims relates is assumed to have had as [of] the date of the invention for which the patent was granted, for the specification of the patent, including the claims with which it ends, is deemed to be addressed to such a person.
>
> The state of the relevant art immediately prior to the date of the invention is part of the common knowledge which the addressee of the patent is assumed to have had. It is important, therefore, that the date of the invention should be determined.

President Thorson then proceeded to discuss the term "date of invention" as used in Canadian patent litigation. One definition was offered by Viscount Cave L. C. in The Permutit Company v. Borrowman, 1926, 43 R.P.C. 356, 359:

> It is not enough for a man to say tha[t] an idea floated through his brain; he must a[t] least have reduced it to a definite and practical shape before he can be said to have invented a process.

In Christiani & Nielsen v. Rice, 1930 S.C.R. 444, the Supreme Court of Canada states that

> by the date of discovery of the invention is meant the date at which the inventor can prove he has first formulated, either in writing or verbally, a description which affords the means of making that which is

invented. There is no necessity of a disclosure to the public.

Id. at 456. President Thorson then explained the term more fully.

> It was not intended, in my opinion, that the test laid down in [*Christiani*] should be all-inclusive. It is clear, of course, that if an inventor can prove that he formulated a description of his invention, either in writing or verbally, at a certain date then he must have made the invention at least as early as that date. It is also clear that the requirement that there must be proof of the formulation of a description of the invention, either in writing or verbally, is neither apt nor necessary in the case of an invention of an apparatus where the inventor can prove that at the asserted date he had actually made the apparatus itself, although there was no formulation of a written or oral description of it. Nor was it intended that the test laid down in the statement should replace the general statement in the Permutit v. Borrowman case (*supra*) that before a man can be said to have invented a process he must have reduced the idea of it to a definite and practical shape. Consequently, even although the test of proof of the formulation of a description of the invention, either in writing or verbally, at a particular date might be appropriate in determining the date of an invention of a process, it cannot have been intended to exclude proof that the process was actually used at the asserted date, even although there was no formulation of a written or oral description of it at such date. Thus the statement in the Christiani v. Rice case (*supra*) to which I have referred should not be interpreted as laying down a rule that proof that an invention was made at an asserted date must be confined to evidence that a written or oral description of it had been formulated at such date. It may also be proved, in the case of an invention of an apparatus, that the apparatus was made at such date or, in the case of an invention of a process, that the process was used by such date. The essential fact to be proved is that at the asserted date the invention was no longer merely an idea that floated

> through the inventor's brain but had been reduced to a definite and practical shape.

It seems that this definition establishes that the date of invention under Canadian law occurs no later than the end of phase two of our model, at which point a working prototype of the invention is in existence. Under Christiani & Nielsen v. Rice, *supra*, the date of invention can occur even earlier, perhaps even in phase one when the inventor is merely conceptualizing the invention, if the inventor can prove he formulated a verbal or written description of the invention before he himself had completed a working prototype. The date of invention is the day the invention is first reduced to definite and practical shape, notwithstanding the fact that further experimentation and testing may be necessary before the inventor is ready to apply for a patent. Thus the date of invention must occur prior to the start of phase three of our model. Indeed, after determining that Permatwist had established a date of invention of either July or early August of 1947 for the apparatus in question,[2] President Thorson went on to point out specifically that "[t]he fact that Mr. Seem and Mr. Stoddard continued to work on Exhibit Z-151 and its accompanying equipment and make further experiments does not affect the fact that they had made the invention of the apparatus . . . at the asserted date."

Having determined the relevant dates of invention, President Thorson proceeded to construe the claims of the patents in light of the state of the art on those dates and uphold the validity of the Canadian patents against claims of lack of novelty, lack of utility, and obviousness. After disposing of other issues he ruled in favor of Leesona and against Scragg in all things.

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[2] He later found the date of invention for the method of processing the yarns to have been at least as early as November 13, 1950.

Proceedings Below

In the present suit the validity of Leesona's American patents is attacked under 35 U.S.C.A. § 102(b), which provides that

> A person shall be entitled to a patent unless . . . (b) the invention was . . . in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States . . . .

Under this section, a single public use or sale prior to the "critical date," i.e., one year before the application for a patent, will result in an invalid patent. Egbert v. Lippmann, 1881, 104 U.S. 333, 26 L.Ed. 755; Minnesota Mining and Manufacturing Co. v. Kent Industries, Inc., 6 Cir. 1969, 409 F.2d 99. Even if no delivery is made, the existence of a sales contract plus the reduction of the invention to a reality in the sense that it is beyond the stage of experimentation constitutes the placing "on sale" required by the statute. Hobbs v. United States Atomic Energy Commission, 5 Cir. 1971, 451 F.2d 849. Public use may be established either by showing a nonsecret, nonexperimental use of the invention prior to the critical date, Pennock v. Dialogue, 1829, 27 U.S. (2 Pet.) 1, 7 L.Ed. 327; Smith & Griggs Manufacturing Co. v. Sprague, 1887, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141, or by establishing that the inventor himself has used the invention primarily for trade and profit prior to the critical date, whether the use is secret or not, Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts Co., 2 Cir. 1946, 153 F.2d 516, cert. denied, 328 U.S. 840, 66 S.Ct. 1016, 90 L.Ed. 1615; Huszar v. Cincinnati Chemical Works, 6 Cir. 1949, 172 F.2d 6. Thus, under certain circumstances a single instance of competitive exploitation of the invention by the inventor prior to the critical date can raise both the "on sale" and "in public use" bars to patentability.

Notwithstanding the existence of facts sufficient to raise either of these bars, a patent is valid if the public use or

sale was primarily for the purpose of experimentation. The Supreme Court's statement of this rule in 1878 is still the law today.

> The use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as [a public] use.

City of Elizabeth v. American Nicholson Pavement Co., 1878, 97 U.S. 126, 134, 24 L.Ed. 1000, 1004. A bona fide experimental use does not place the invention in public use within the meaning of the statute even though the invention on experiment proves complete and requires no modification or change. *Id.* Similarly a sale of the invention primarily for experimental purposes, to enable the inventor to determine whether the invention is complete, does not place the invention "on sale" within the meaning of the statute. Adams v. Columbus Manufacturing Co., M.D.Ga. 1960, 180 F.Supp. 921. If the use of the invention is primarily for experimental purposes, the fact that profits are made will not raise any bar to patentability.

> A use by the inventor, for the purpose of testing the machine, in order by experiment to devise additional means for perfecting the success of its operation, is admissible; and where, as incident to such use, the product of its operation is disposed of by sale, such profit from its use does not change its character; but where the use is mainly for the purposes of trade and profit, and the experiment is merely incidental to that, the principle, and not the incident, must give character to its use. The thing implied as excepted out of the prohibition of the statute is a use which may be properly characterized as substantially for the purposes of experiment.

Smith & Griggs Manufacturing Co. v. Sprague, 1887, 123 U.S. 249, 256, 8 S.Ct. 122, 126, 31 L.Ed. 141; Pickering v. Holman, 9 Cir. 1972, 459 F.2d 403. Whether a use is primarily for the purpose of experimentation is primarily a

matter of the inventor's intent. "[T]he use ceases to be experimental when the motivation of the inventor is to exploit the invention and gain a competitive advantage over others." Solo Cup Co. v. Paper Machinery Corp., E.D. Wis. 1965, 240 F.Supp. 126, 131, modified on other grounds, 7 Cir. 1966, 359 F.2d 754. *See generally*, 2 Deller's Walker on Patents, §§ 145, 147 (2d ed. 1964).

In response to motions for summary judgment alleging that the inventions had been in public use and on sale prior to the critical date, Leesona filed a long memorandum in opposition which included, as required by Local Rule 10(J)(2),[3] a short statement of eleven material facts regarding which Leesona asserted there were genuine issues requiring a trial. The district court ruled that Leesona's response did not directly controvert any of the facts alleged by the movants to have been established and therefore deemed those facts admitted under the local rule. The crucial facts deemed admitted were numbers seven through twelve, which described the Synfoam license agreement. The district court regarded the admitted facts relating to the Synfoam license as sufficient to justify the conclusion that the invention embodied in the patents was on sale prior to the critical date. Similarly the court held that the commercialization of the invention by execution of the license established a use by the inventor for trade or profit sufficient to raise the "in public use" bar to patentability

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[3] The rule provides as follows:

> Motions for summary judgment shall be accompanied by a memorandum of law, necessary affidavits, stamped addressed envelopes for notice, and a concise statement of the material facts as to which the moving party contends there is no genuine issue to be tried. The papers opposing a motion for summary judgment shall include a memorandum of law, necessary affidavits, and a concise statement of the material facts as to which it is contended that there exists a genuine issue to be tried. All material facts set forth in the statement required to be served by the moving party will be deemed admitted unless controverted by the opposing party's statement.

under Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts Co., *supra.*

Thus the resolution of the summary judgment motions came down finally to the issue of experimental use. In holding that the experimental stage had ended prior to the signing of the Synfoam license the district court relied heavily on the positions taken by Leesona in the Canadian litigation and the findings of President Thorson. The court noted that it had been to Leesona's advantage to establish as early a date of invention as possible in the Canadian litigation, and it held that Leesona was collaterally estopped to retreat from its previous position by arguing that the experimental stage of the invention lasted until after the critical date, January 4, 1953. Therefore the court held that the experimental use exception did not apply and that the patents were invalid because they were on sale and in public use prior to the critical date.

Estoppel

There is some dispute between the parties as to the applicability of the doctrine of collateral estoppel in these circumstances. The doctrine, as applied by the district court, holds that

> where there is a second action between parties, or their privies, who are bound by a judgment rendered in a prior suit, but the second action involves a different claim, cause, or demand, the judgment in the first suit operates as a collateral estoppel as to, but only as to, those matters or points which were in issue or controverted and upon the determination of which the initial judgment necessarily depended.

1B Moore's Federal Practice, ¶ 0.441[2] (2d ed. 1974) (footnotes omitted). Despite the lack of privity between Scragg and any of the appellees here, the court found the doctrine applicable under Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation, 1971, 402 U.S. 313, 91 S.Ct. 1434, 28 L.Ed.2d 788.

Leesona argues that collateral estoppel is inapplicable because the requirements of *Blonder-Tongue* are not met here. Appellees reply that Leesona should in any case be estopped to change its position by the doctrine of judicial estoppel, which precludes a party from advocating a position inconsistent with one previously taken with respect to the same facts in an earlier litigation, citing 1B Moore's Federal Practice, ¶ 0.405[8]. We need not resolve this question, since it is clear that any form of estoppel at least requires an attempted change of position with regard to the same issue, legal or factual, that was previously argued or decided. Our holding that the issue here differs from the issue before the Exchequer Court precludes the application of any type of estoppel.

The district court's misapprehension of the issues decided in the Canadian litigation is clear. The district court stated flatly, "The determination made by the Canadian Court concerning the date of invention *and the date of reduction to practice* was necessary for that judgment—the dates were both in issue and controverted." (Emphasis supplied.) President Thorson, however, was careful to distinguish the issue before him from the American patent concept of reduction to practice: "It is settled that in Canada the determination [of the date of invention] does not depend on the date of the reduction of the invention to practice in the sense of the United States decisions on the subject and they must, therefore, be read with caution." Assuming that the district court was correct in equating the date of reduction to practice with the end of the experimental period under § 102(b),[4] that date was explicitly not decided by President Thorson. It was error for the district court to rely on either findings or arguments in the Canadian case, since they went to the wholly different issue of the date of invention under Canadian law.

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[4] See, however, the discussion of that issue *infra*.

The difference between the two can be illustrated by reference to our four phase model. The Canadian "date of invention," as noted above, occurs no later than the end of phase two, when the invention is fully embodied in a working model or prototype. The American "reduction to practice," however, is not achieved until the inventor has sufficiently tested the prototype to prove its utility and to determine that no further refinements are necessary. In our model, this is testing in phase three. Consequently, "reduction to practice," must occur later in time than the date of invention.[5] The two dates being necessarily different, Leesona cannot be "estopped" to make its argument regarding the end of the experimental stage either by its previous arguments or by the Exchequer Court's decision regarding the date of invention.

While the difference between the two issues is easily conceptualized by using our four phase model, the legal framework is confusing, primarily as a result of inconsistent judicial definitions of "reduction to practice." This confusion may have misled the district court, and it has provided both sides in this case with precedent to support their opposing positions. Despite the confusion we find very little actual conflict in the cases.

In layman's terms, "reduction to practice" connotes the initial construction of a working model of a new invention. Indeed, one definition of "reduction" is "transformation into objective form or reality," as in "reduction of the device to practice." Webster's Third New International Dictionary. Therefore the lay understanding of the term would place the reduction to practice exactly at the end of phase two of our model. As a legal term of art, however, "reduction to practice" includes not only this

[5] In rare instances, the invention might be so simple that its practical utility would be obvious even without any testing. In such cases, the two dates would coincide. The inventions before us are not in this small class.

reduction to reality but also sufficient testing or experimentation to demonstrate that the device as it exists possesses sufficient utility to justify a patent, i.e., that the invention is suitable for its intended purpose. Voisinet v. Cogliannese, Cust, & Pat.App.1972, 455 F.2d 1064; Elmore v. Schmitt, 1960, 278 F.2d 510, 47 CCPA 960; Konet v. Haskins, 1950, 179 F.2d 1003, 37 CCPA 913. Mere construction of the device, which is sufficient to bring phase two to a close, does not reduce it to practice unless it is so simple that satisfactory operation is obvious. Gordon v. Hubbard, 1965, 347 F.2d 1001, 52 CCPA 1598.

> "The efforts of the inventor must have passed beyond experiment, beyond the reach of possible or probable failure, must have attained certainty by embodiment in the intended form, and must be capable of producing the desired result; for where experiments have inspired hope of future achievement of the purpose for which they were designed, they still fall short of reduction to practice * * *." Wickers v. McKee, 1907, 29 App.D.C. 4, 13.

> The "invention * * * [must have] * * * been tested so far as to make sure that it will operate under service conditions. * * * [A] test under service conditions is necessary in those cases, and in those only, in which persons qualified in the art would require such a test before they were willing to manufacture and sell the invention, as it stands. * * *" Sinko Tool & Manufacturing Co. v. Automatic Devices Corp., 2 Cir., 1946, 157 F.2d 974, 977.

> "While it is true that reduction to practice does not require a device embodying the invention to be mechanically perfect, or a commercial success, its practical efficacy and utility must be demonstrated. * * *" Van Auken v. Cummings, 1931, 49 F.2d 490, 492, 18 C.C.P.A., Patents, 1250.

> "Actual performance is required of the function for which the machine is intended with a quality, extent, and character of operation sufficient to indicate its utility in the environment in which it is contemplated

> to be useful. * * *" Field v. Knowles, 1950, 183 F.2d 593, 601, 37 C.C.P.A., Patents, 1211.

Radio Corporation of America v. International Standard Electric Corp., 3 Cir. 1956, 232 F.2d 726, 730 n. 9. *See generally* 1 Deller's Walker on Patents, § 46 (2d ed. 1964); 69 C.J.S. Patents § 87 (1951).

Thus the legal definition of the date of reduction to practice appears to equate it precisely with the end of the experimental period for purposes of § 102(b). At least one commentator has clearly equated the two.

> [T]he law on experimental use has developed mainly from the diverse jurisdictions in infringement cases and has had less than homogeneous treatment. It is safe to say, therefore, that not all courts will recognize that the determination that a public use is excused as experimental depends upon a finding that there has not been at that point an actual reduction to practice of the claimed invention. Nonetheless, no other reasonable basis for the determination exists in the light of the patent statute.

Kayton, This Year (1966) In Patent Law, 35 Geo.Wash.L. Rev. 720, 727 (1967). The purpose of the experimental exception to § 102(b) is to allow the inventor sufficient time to perfect his invention. City of Elizabeth v. American Nicholson Pavement Co., 1878, 97 U.S. 126, 24 L.Ed. 1000. An invention is "perfected" for purposes of patentability once it has been reduced to practice by sufficient testing and experimentation to demonstrate its utility. At that point, then, further experimentation is not necessary before applying for a patent, and it would seem that the experimental period should end. There is support in the cases for such a view. *See, e.g.*, Sperry Rand Corp. v. Bell Telephone Laboratories, Inc., S.D.N.Y.1962, 208 F. Supp. 598, appeal dismissed, 2 Cir. 1963, 317 F.2d 491; Minnesota Mining & Manufacturing Co. v. Kent Industries, Inc., E.D.Mich.1967, 274 F.Supp. 993, aff'd, 6 Cir.

1969, 409 F.2d 99; Cali v. Eastern Air Lines, Inc., E.D.N.Y. 1970, 318 F.Supp. 474, rev'd, 2 Cir. 1971, 442 F.2d 65; Kraus v. Emhart Corp., N.D.Cal.1970, 320 F.Supp. 60.

Numerous cases, however, have explicitly extended the experimental period past the point of reduction to practice. In General Motors Corp v. Bendix Aviation Corp., N.D.Ind.1954, 123 F.Supp. 506, the court upheld an experimental use argument despite prior reduction to practice.

> The courts have observed that there is a great deal of difference between the requirements of a reduction to practice and the requirements made in the automobile industry for a commercially practical device, Thompson v. Murray, 1936, 84 F.2d 202, 23 C.C.P.A., Patents, 1281, and that experiments may continue in an attempt to further perfect the device beyond the requirements of a reduction to practice. Ibid. It was stated in Cleveland Trust Co. v. Schriber-Schroth Co., 6 Cir., 1937, 92 F.2d 330, 336:
>
> > "So long as use by the inventor can fairly be considered experimental and collateral to the development of the invention in its complete form, the bar of the statute does begin to run. Reo Motor Car Co. v. Gear Grinding Mach. Co., 6 Cir., 42 F.2d 965, 968. The emphasis that is laid upon Gullick's use of a car with experimental pistons for business and pleasure for a considerable period does not impress us. Road tests of many thousands of miles are considered necessary to determine the efficiency of an engine and its parts. That such transportation is not wasted does not of itself constitute a public use."
>
> There is no consistency in the fact that even though Jorgensens successfully reduced to practice the automatic choke in question, they continued to experiment with it in the hope of "demonstrating its utility." Therefore, it is concluded that the plaintiff is not barred because of any public use of the invention . . . .

Id. at 520. Similarily, in Cataphote Corp. v. De Soto Chemical Coatings, Inc., N.D.Cal.1964, 235 F.Supp. 936, aff'd, 9 Cir. 1966, 356 F.2d 24, the court said that

> the test for establishing a reduction to practice is different than the test for establishing an experimental use. To establish a reduction to practice of the inventor's idea, there must be a demonstration that the inventor's idea works; in other words, that the invention will perform in a manner which will accomplish its intended purpose. RCA v. International Standard Elec. Corp., 232 F.2d 726, 730 (3rd Cir. 1956). To establish an experimental use, there must be a demonstration that the use was substantially for the purpose of experiment. Smith & Griggs Mfg. Co. v. Sprague, supra, 123 U.S. at 256, 8 S.Ct. 122. Thus, there may be an experimental use even following reduction to practice where the experiments are part of an attempt to further refine the device.

Id. at 934. *Accord,* Atlas v. Eastern Air Lines, Inc., 1 Cir. 1962, 311 F.2d 156, cert. denied, 1963, 373 U.S. 904, 83 S.Ct. 1290, 10 L.Ed.2d 199; Solo Cup Co. v. Paper Machinery Corp., E.D.Wis.1965, 240 F.Supp. 126, modified on other grounds, 7 Cir. 1966, 359 F.2d 754; Hunt Industries, Inc. v. Fibra Boats, Inc., S.D.Fla.1969, 299 F.Supp. 1145.

This apparent conflict stems primarily from the differing definitions of "reduction to practice" being applied. The cases are in substantial agreement that an inventor is permitted to experiment on his invention after reducing it to reality (the end of phase two of our model) without encountering the "on sale" or "in public use" bars, so long as the experimentation is his primary objective and it is reasonably necessary for demonstrating the device's utility and its lack of need for further refinement. By saying this phase three experimentation occurs subsequent to the "reduction to practice," the cases in the General Motors Corp. v. Bendix Aviation Corp. line are merely using the lay definition of the term, equating it with the end of phase two of our model. Despite the differences in terminology, the result under either line of cases is the same: an inventor is permitted a reasonable amount of

experimentation in phase three during which a placing on sale or a public use will not bar the patent under § 102(b), so long as the public use or sale is only incidental to the experimentation. We are in agreement with the Second Circuit's view of the matter.

> There are occasional expressions in the books which read as though the period of experiment is only that during which the inventor is trying to reduce the invention to a stable form, to adapt it completely to its purposes: but we should hesitate to hold that his privilege is so limited. For example, in Elizabeth v. Pavement Co., 97 U.S. 126, 24 L.Ed. 1000, it did not appear that Nicholson, the inventor, delayed for any other reason than to learn how well his pavement would wear; apparently it was already as good as he hoped to make it. At any rate we shall assume that an inventor may wait longer, may wait until he learns whether his invention is of enough value to justify an application for a patent. On this view he may test it, not only to put it into definitive form, but to see whether his ideas are worth exploiting.

Aerovox Corp. v. Polymet Manufacturing Corp., 2 Cir. 1933, 67 F.2d 860, 862 (L. Hand, J.). *See also,* 2 Deller's Walker on Patents, § 145 (2d ed. 1964).

There are thus two lines of authority leading to the same result. The first, adopting the legal definition, holds that "reduction to practice" does not occur until the inventor has had a reasonable time after reduction of the invention to reality (i.e., after the end of phase two) to experiment. During this period, an incidental public use or sale will not bar the patent. The second line, equating "reduction to practice" with the initial reduction of the invention to reality, permits a subsequent experimental period of reasonable duration. It would be possible to juxtapose the first line's prohibition of post-reduction-to-practice experimentation with the second's definition of "reducton to practice" and arrive at the rigid rule that there can be no expermental period after the first working

model or prototype has been constructed. This, in effect, would read out of the law the reasonable period of phase three experimentation sanctioned under either line of cases. Appellees apparently argue that we should adopt such a rule. A case illustrative of this approach is Cali v. Eastern Air Lines, Inc., E.D.N.Y.1970, 318 F.Supp. 474, rev'd, 2 Cir. 1971, 442 F.2d 65. The district court invalidated the patent because it was in public use prior to the critical date and rebuffed the inventor's experimental use argument, since the invention was fully developed when used, and the tests concerned only the practical utility of either of two methods of carrying out the principle of the invention. In terms of our model, phase two was complete, and the "experimentation" was only for the purpose of demonstrating the invention's utility and completeness. Thus, the district court effectively drew the line for the completion of permissible experimentation at the end of phase two. In reversing, the Second Circuit stated,

> At the threshold, we differ with the district court's interpretation of the scope of the "experimental use" exception. Judge Dooling appears to have believed that even Pan Am's "first use" of the tie rod and weld was not predominantly experimental even assuming that the primary purpose of the use was to determine whether Cali's idea should be adopted or rejected. Apparently the district court assumed that a use may not be "experimental" if the purpose is to see if the idea in question has any value at all, rather than to explore ways of improving the invention or "to determine or guide the direction of *modification* of an *emergent* inventive concept." 318 F.Supp. at 477 (emphasis added). The district court appears to have equated "experimental" with "developmental." *Id.*
>
> This conception of the scope of the experimental use exception apparently underlay the whole of the district court's decision. We find it unduly restrictive. We see no good purpose in attempting to distinguish sharply between experimentation with an eye to going "back to the drawing board" for modification and rethinking in the event of initial failure on the one hand

> and experimentation directed more toward discovering whether a novel invention should be adopted and marketed or discarded in its entirety. Indeed, we have previously said as much in Aerovox Corp. v. Polymet Mfg. Corp., 67 F.2d 860, 862 (2d Cir. 1933) where we "assumed" that an inventor may experiment with an idea "not only to put it into definitive form, but to see whether his ideas are worth exploiting."
>
> The leading case defining the reach of the experimental use exception, Elizabeth v. Pavement Co., 97 U.S. 126, 24 L.Ed. 1000 (1877) involved experimentation to test the *durability* of the inventor's new kind of pavement. There was no indication that the inventor put the pavement to the test of six years' public wear to determine what improvements he might make, rather than simply to discover whether the idea was worth pursuing. Indeed, the Court's decision in favor of the patentee was premised on the assumption that the aim of the test might be "to bring his invention to perfection, *or* to ascertain whether it [would] answer the purpose intended." 97 U.S. at 137 (emphasis added). Either sort of experimental use—if indeed any such sorting is tenable—would bring the invention within the experimental use exception because "it is the interest of the public, as well as [of the inventor] that the invention should be perfect *and* properly tested. * * *" *Id.* (Emphasis added.)

422 F.2d at 70-71. We are in full agreement with this formulation of the permissible extent of the experimental period.

Appellees argue that the experimental period must have ended before the signing of the Synfoam license because the invention was by then functional for public use purposes because it could perform the general function for which it was developed. This argument, if accepted, would also read out of the law any permissible experimentation during phase three, since by definition, an invention is a functioning reality at the end of phase two. Such a rigid rule is not the law, and we reject the argument.

There are, it is true, occasional statements in the books that seem to lend support to appellees' argument. In Atlas v. Eastern Air Lines, 1 Cir. 1962, 311 F.2d 156, the court rejected the inventor's argument that his invention could not have been in public use because it was not yet fully developed. The court said,

> The thrust of plaintiff's argument in this court is that the type of device represented by the American Airlines instrument has not been fully perfected and was still the subject of further refinements. However, the rule is that an invention is deemed functional for public use purposes when it can perform the general function for which it has been developed, even though the device might later be refined.

Id. at 162. In Kardulas v. Florida Machine Products Co., 5 Cir. 1971, 438 F.2d 1118, 1123, we noted that

> [t]he courts have generally construed the term "public use" broadly. The Sixth Circuit, for example, has said that, generally, any nonsecret use of a completed and operative invention in its "natural and intended way" is a public use.

In Electric Storage Battery Co. v. Shimadzu, 1939, 307 U.S. 5, 20, 59 S.Ct. 675, 684, 83 L.Ed. 1071, the Court stated

> The ordinary use of a machine or the practice of a process in a factory in the usual course of producing articles for commercial purposes is a public use.

In National Biscuit Co. v. Crown Baking Co., 1 Cir. 1939, 105 F.2d 422, 425, it was said that

> [t]he burden of avoiding the effect of a prior public use or sale by showing that the device used or sold was not complete or perfect, or, in other words, commercially inoperative, but was perfected through experiments made while in use during commercial op-

eration, is on the plaintiff and must be shown by strong and convincing proof.

These cases, however, do not stand for the proposition that experimentation during phase three may not excuse a public use or sale. The courts instead were focusing on experimentation which results in changes furthering the development of the invention, experimentation which by definition occurs during phase two of our model, before a finished working prototype embodying the claims of the later patent exists in objective form. Of course there can be no public use or sale of the invention during phase two, but, strictly speaking, this is not by operation of the experimental use exception. Rather, there can be no public use or sale because there cannot be *any* use or sale of the invention at all, since it is not yet in existence but is merely in an incomplete stage of development. The possibility of public use or sale does not even arise until the end of phase two: before that, the invention is not yet "functional for public use purposes."

Thus, the court in *Atlas* was responding to the inventor's argument that the invention was not fully developed, i.e., that phase two had not ended, rather than to the argument that the use of the fully developed invention was primarily experimental. In *Kardulas*, there was no experimental use argument made, so the court was not negating such an argument but merely pointing out that an invention must be "completed" and "operative" before there can be a public use of it. Of course, an invention is not "completed" and "operative" until phase two has ended. The same is true of *Electric Storage Battery*. The strongest support for appellees' position is provided by *National Biscuit Co.*, where the court did seem to be limiting the experimental use exception to experiments which result in change and development of the invention—phase two experimentation. Such a rule would be at odds with the controlling Supreme Court pronouncement, which clearly per-

mits experiments that do not result in further change—phase three experimentation.

> When the subject of invention is a machine, it may be tested and tried in a building, either with or without closed doors. In either case, such use is not a public use, within the meaning of the statute, so long as the inventor is engaged, in good faith, in testing its operation. He may see cause to alter it and improve it or not. His experiments will reveal the fact whether any and what alterations may be necessary. If durability is one of the qualities to be attained, a long period, perhaps years, may be necessary to enable the inventor to discover whether his purpose is accomplished. And though, during all that period, he may not find that any changes are necessary, yet he may be justly said to be using his machine only by way of experiment; and no one would say that such a use, pursued with a bona fide intent of testing the qualities of the machine, would be a public use, within the meaning of the statute.

City of Elizabeth v. American Nicholson Pavement Co., 1878, 97 U.S. 126, 134-135, 24 L.Ed. 1000, 1004. Faced with this possible conflict, we of course follow the Supreme Court's view.

As the Second Circuit noted in *Cali, supra,* courts have not distinguished between phase two developmental experiments and phase three experimentation and testing for purposes of the experimental exception. The theoretical bases of the exception, however, are different for the two phases. If the invention is still in phase two, the possibility of a public use or sale has not yet even arisen, since there does not exist in final form a working prototype that could be publicly used or sold. On the other hand, if the invention has passed into phase three, it has existence as an objective reality, and it could be publicly used or sold. However, such a public use or sale will be excused if the invention is still undergoing experimentation that is reasonably necessary to test its utility or to determine whether further refinement is needed. Thus the fact that an inven-

tion is no longer undergoing phase two developmental experimentation does not necessarily negate the fact that it may still be in the "experimental period" sufficient to excuse a public use or sale. Therefore, the fact that Leesona's inventions may have been functional for public use purposes, even if established or admitted, would not preclude a finding of experimental use, if that could be established by sufficient evidence.

In sum, the most that was decided in the Canadian litigation was the point in time when phase two ended. Leesona cannot be estopped by either argument or judgment in that case to try to establish phase three experimentation sufficient to avoid the § 102(b) bars in this case. Indeed, Leesona argues with force that it has not changed its position, since an earlier end to phase two would not be inconsistent with phase three experimentation that might have extended past the critical date. It was error for the district court to hold Leesona estopped to attempt to establish its experimental use theory.

The Synfoam License

Appellees argue that the license itself is sufficient to prove that the invention was on sale and to show that the experimental period was over, since it contained no requirement of reporting back to Leesona testing results and did not restrict Synfoam from putting the invention into commercial production. They argue that any license to use an invention in return for a share of profits is a commercial, competitive use of the invention, "disconnected from and unnecessary to the legitimate perfection of the device by experimental means." Koehring Co. v. National Automatic Tool Co., 7 Cir. 1966, 362 F.2d 100, 104.

It is true that the license, as a bilateral contract, may be conclusive regarding the parties' legal rights and duties. It must be stressed, however, that the experimental use

issue is a question not of legal relations but of fact, depending, as it does, on the inventor's state of mind. Smith & Griggs Manufacturing Co. v. Sprague, 1887, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141; Lanham v. Southern Bakeries Co., 5 Cir. 1961, 295 F.2d 816, affirming and adopting opinion of Lanham v. Southern Bakeries Co., N.D.Ga.1960, 198 F.Supp. 926; Solo Cup Co. v. Paper Machinery Corp., E.D.Wis.1965, 240 F.Supp. 126, modified on other grounds, 7 Cir. 1966, 359 F.2d 754. Thus, even if the terms of the license sufficiently establish that the inventions in issue were on sale prior to the critical date (a point which Leesona attempted to dispute), the question of experimental use would remain, since a sale of the invention, if primarily for experimental purposes, does not place the invention "on sale" within the meaning of the statute. Adams v. Columbus Manufacturing Co., M.D.Ga.1960, 180 F.Supp. 921. Indeed, even in the *Koehring* case cited by appellees, the court did not hold that every commercial exploitation of the invention prior to the critical date necessarily invalidates the patent. Instead, the court specifically adhered to the accepted practice by holding that a showing of a commercial exploitation merely shifts the burden to the inventor to prove that the purpose was primarily experimental.

> [O]nce a single use of an operative device embodying the invention prior to the critical date has been shown, the inventor must carry the burden of proving that the use was part of a bona fide program of experimentation. Atlas v. Eastern Air Lines, Inc., 311 F.2d 156, 160 (1st Cir. 1962), cert. denied, 373 U.S. 904, 83 S.Ct. 1290, 10 L.Ed.2d 199 (1963); Randolph v. Allis-Chalmers Mfg. Co., 264 F.2d 533, 536 (7th Cir. 1959). This burden is not sustainable on the record before us.

Koehring Co. v. National Automatic Tool Co., 7 Cir. 1966, 362 F.2d 100, 104. Thus, whatever its wording, the Synfoam license in itself cannot conclude the experimental use issue.

Appellees urge adoption of the Ninth Circuit's *Robbins* rule, which is as follows:

> A sale or an offering for sale precludes any inquiry into the experimental nature of the sale *unless* the contract of sale or the offering for sale contains an express or clearly implied condition that the sale or offering is made primarily for experimental use.
>
> Thus the sale or offering would not ipso facto invalidate the patent nor preclude further inquiry into the experimental nature of the use where the contract or the offer stated that the sale was for experimental purposes (*Austin* [Austin Machinery Co. v. Buckeye Traction Ditcher Co., 6 Cir., 13 F.2d 697] and *Ushakoff* [Ushakoff v. United States, 327 F.2d 669, 164 Ct.Cl. 455], *supra*); or showed that the device was still experimental and that no workable prototype had been made (*Amerio Contact Plate Freezers* [Amerio Contact Plate Freezers v. Belt-Ice Corp., 9 Cir., 316 F.2d 459], *supra*); or required that the invention should be kept confidential or from public view, or that reports on the use of the invention should be supplied to the inventor (*Ajem Laboratories* [Ajem Laboratories v. C. M. Ladd Co., 6 Cir., 424 F.2d 1124], *Cataphote,* and *Piet* [Piet v. United States, D.C., 176 F.Supp. 576], *supra*); or other similar statements appeared from which it could clearly be implied that the sale or the offering was made for an experimental purpose.
>
> In cases where the exceptions did *not* appear in the sale or offering for sale, summary judgment would be permissible and proper. If the exceptions did appear, then a trial on the merits could dispose of exceptions made falsely or collusively and, generally, the merits of the claimed exceptions.
>
> Where there has been commercial exploitation, the courts have generally found there was "public use" and not experimental use. Smith & Griggs Mfg. Co. and FMC Corp. [FMC Corp. v. F. E. Myers & Bro. Co., 6 Cir., 384 F.2d 4], *supra.* But even in case of a sale where the real purpose was experimentation, the patent is still valid. Watson v. Allen, *supra.* Thus

> obtaining some monetary return from a sale made primarily for experimental purposes may not constitute in every case a "commercial exploitation" which invalidates the patent.
>
> Under this rule, where there was some commercial exploitation, a showing that a sale or offering for sale was conditioned upon experimentation would preclude summary judgment against patentability. The court could then hear proof on the merits and determine whether the case came within the experimental exception.

Robbins Co. v. Lawrence Manufacturing Co., 9 Cir. 1973, 482 F.2d 426, 433-434; Micro-Magnetic Industries, Inc. v. Ardac, Inc., 9 Cir. 1973, 488 F.2d 770. In our view, such a rule merely lays a trap for the unwary. It could work injustice by preventing proof of a primarily experimental use merely because an inventor or his counsel had inadvertently neglected to include sufficient indication of experimentation within a sales contract or offer. We regard the rule as excessively rigid, and we expressly decline to adopt it. An inventor should be free to introduce evidence of a bona fide experimental intent even if that intent is not indicated within a contract of sale or offering.

Adequacy of Leesona's Opposition to the Motions for Summary Judgment

Appellees argue that the summary judgment should be upheld even though the district court erred in relying on collateral estoppel, since Leesona failed to point out in detail admissible evidence that tended to create any material fact issues for trial. We are bound to read Leesona's Memorandum in Opposition most favorably to Leesona. United States v. Diebold, Inc., 1962, 369 U.S. 654, 82 S.Ct. 993, 8 L.Ed.2d 176; Poller v. Columbia Broadcasting System, Inc., 1962, 368 U.S. 464, 82 S.Ct. 486, 7 L.Ed.2d 458; Jones v. Borden Co., 5 Cir. 1970, 430 F.2d 568. Giving it such a reading, it is clear that it does identify specific

evidentiary matter putting material facts in issue. There is considerable direct deposition and Canadian trial testimony, both from the Permatwist partners and from others, indicating that experiments were performed on the Synfoam machines, that reports were made to the Permatwist partners on the result, and that changes in the machines actually resulted from this experimentation.[6] All of this might provide sufficient basis for a reasonable belief that the experimental period lasted past the critical date.

The district court characterized this testimony as nothing but "self-serving comments of the inventors" and held that it was "really no evidence at all." In so holding the court violated the rule that

> [t]he trial court should be very careful . . . to avoid assessing the probative value of any evidence presented to it, for this would be an unwarranted extension of the summary judgment device. Assessment of the probative value of evidence is properly the function of the jury or the judge sitting as a trier of facts.

Gauck v. Meleski, 5 Cir. 1965, 346 F.2d 433, 436. *Accord*, Gross v. Southern Ry., 5 Cir. 1969, 414 F.2d 292. Questions of credibility should not normally be decided by means of summary judgment but should instead be left for the trier of fact. Croley v. Matson Navigation Co., 5 Cir. 1970, 434 F.2d 73. The court should therefore not have disregarded Leesona's evidence. Taking it into account, it is clear that Leesona succeeded in demonstrating that there existed material fact issues requiring a trial.

This case is a poor one for summary judgment in any event. The experimental use exception is basically a question of the inventor's intent. When commercialization of

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[6] Although an invention may still be in the experimental period even though the experiments do not result in any changes, the fact that changes do result lends additional support to the experimental use theory.

the invention is alleged, it requires a weighing of two motives—experimentation and profit—that may co-exist, because the experimental use exception applies if the experimental motive predominates.[7] We have observed before that issues involving state of mind and intent are not well suited to disposition by summary judgment, since much depends upon the credibility of witnesses testifying as to their own states of mind, and assessing credibility is a delicate matter best left to the fact finder. Alabama Great Southern R. R. v. Louisville and Nashville R. R., 5 Cir. 1955, 224 F.2d 1. Most courts are in agreement that issues involving state of mind are difficult to handle by summary judgment. 10 C. Wright & A. Miller, Federal Practice and Procedure: Civil § 2730. Also, since the experimental use exception involves weighing two different subjective motives, both of which might be established by the evidence, reasonable men might draw different inferences even from the same established facts. Therefore, the issue should be resolved by the fact finder after a full hearing of all the evidence rather than by summary judgment. Croley v. Matson Navigation Co., 5 Cir. 1970, 434 F.2d 73. See also Tee-Pak, Inc. v. St. Regis Paper Co., 6 Cir. 1974, 491 F.2d 1193; Austin Machinery Co. v. Buckeye Traction Ditcher Co., 6 Cir. 1926, 13 F.2d 697, cert. denied, 1927, 273 U.S. 747, 47 S.Ct. 448, 71 L.Ed. 871 (reversing a judg-

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[7] Some cases have loosely said that the experimental use exception applies only if experimentation was the inventor's *sole* motivation. Dart Industries, Inc. v. E. I. DuPont De Nemours and Co., 7 Cir. 1973, 489 F.2d 1359; Minnesota Mining and Manufacturing Co. v. Kent Industries, Inc., 6 Cir. 1969, 409 F.2d 99. With deference, we must say that this misstates the law. The Supreme Court has made it clear that the experimental use exception applies, despite the presence of a profit motive, if experimentation is the inventor's dominant purpose, and this rule has never been directly questioned. Smith & Griggs Manufacturing Co. v. Sprague, 1887, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141; Watson v. Allen, 1958, 103 U.S.App.D.C. 5, 254 F.2d 342; Lanham v. Southern Bakeries Co., 5 Cir. 1961, 295 F.2d 816.

ment of patent invalidity for prior public use or sale on the ground that the district court drew the wrong *inferences* from the established facts); Micro-Magnetic Industries, Inc. v. Ardac, Inc., 9 Cir. 1973, 488 F.2d 770.

Reversed and remanded for further proceedings not inconsistent with this opinion.

JUDGMENT

This cause came on to be heard on the transcript of the record from the United States District Court for the Southern District of Florida, and was argued by counsel;

On Consideration Whereof, It is now here ordered and adjudged by this Court that the judgment of the said District Court in this cause be, and the same is hereby, reversed; and that this cause be, and the same is hereby remanded to the said District Court for further proceedings consistent with the opinion of this Court;

It is further ordered that defendants-appellees, The Duplan Corporation, et al., and plaintiffs-appellees, Kayser-Roth Corporation and Sauquoit Fibers Company, pay to defendants-appellants, Leesona Corporation and Permatwist, the costs on appeal to be taxed by the Clerk of this Court.

July 29, 1974

Issued as Mandate:

UNITED STATES DISTRICT COURT, S. D. FLORIDA.

In re Yarn Processing Patent Validity Litigation.

SAUQUOIT FIBERS CO.

v.

LEESONA CORP. et al.

KAYSER-ROTH CORP. et al.

v.

LEESONA CORP. et al.

LEESONA CORP.

v.

DUPLAN CORP. et al.

M.D.L. Docket No. 82.

Civ. Nos. 72-563, 72-641 * and 72-691.

April 25, 1973.

ORDER GRANTING MOTIONS FOR PARTIAL SUMMARY JUDGMENT

ATKINS, District Judge.

Two motions for partial summary judgment of patent invalidity have been filed in this consolidated proceeding by the parties opposing United States Letters Patent 2,803,105, 2,803,108, and 2,803,109, and they have been the subject of thorough discovery and briefing almost from the time these cases were consolidated.[1] The grounds upon which the

[1] The motion by Sauquoit was filed in the Eastern District of Pennsylvania in Sauquoit Fibers Co. v. Leesona Corp., et al., Civil No. 70-1728 on April 29, 1971. When that action was transferred here for discovery, the motion was pending although a final response had not been filed. Following the completion of the expedited discovery on the § 102(b) issues, the law was exhaustively briefed by all parties; the issue is now properly before the Court for decision.

motion is based are derived entirely from Section 102(b) of Title 35, United States Code, wherein it is provided:

> A person shall be entitled to a patent unless—
>
> * * * * * *
>
> (b) the invention was . . . in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, ...

While this section reads simply enough, there is much case law both construing and applying these two standards that must be discussed before the Court can intelligently decide the question at hand. Fortunately in this instance the question presented is a relatively narrow one with most of the essential facts being either stipulated to or admitted. The real contest lies in the application of the patent validity and summary judgment standards to those essentially non-disputed facts. Based on the reasons more fully set out below, the Court is of the opinion that summary judgment must be granted in favor of Sauquoit and the New York "plaintiffs"[2] declaring these "single heater" patents invalid.

I

It is appropriate at this point to detail the facts surrounding this critical period in the history of yarn processing, not so much for the purpose of showing that they are not in dispute, but rather to put the material facts in perspective.

Although Leesona now owns these patents, the applications for the three patents listed above [hereinafter referred to as '105, '108, and '109 patents] were filed by

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[2] For the purposes of this opinion, the term New York plaintiffs will be used to designate those members of the throwing industry who originally challenged the validity of these patents in the Eastern District of New York. *See* note 4 *infra.*

Warren A. Seem and Nicholas J. Stoddard on January 4, 1954, with the patents themselves issuing on August 20, 1957. Jointly characterized in many instances as the "single heater" patents, they disclose both an apparatus and various methods for processing thermoplastic yarns (i.e., polyamide substances such as nylon, orlon and dacron) to impart of the fluffiness, crimp, and elasticity characteristic of "false twist" yarns in a single, continuous, rapid fashion.[3] A detailed discussion of the precise language of the various claims in each patent, and how that language would withstand the other tests of patent validity, is unnecessary at this juncture. When the charge of invalidity centers on the "public use" or "on sale" provision of § 102(b), as this summary judgment motion does, most of the technical ramifications of patent law are pretermitted, making this grossly simplistic explanation of false twisting sufficient for the Court's purposes.

The applications for these patents were the result of many years of work, both part and full-time, by Mr. Seem and Mr. Stoddard. The two men had extensive experience in the throwing industry[4] prior to their work together on what finally culminated in the patents in suit. At one time in the middle 1930's Stoddard worked under Seem at the

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[3] It is necessary for thermoplastic yarns to be given a so-called "false twist" property in order for them to be satisfactory for textile manufacturing purposes because of the lack of any natural crimp or fluffiness in the synthetic yarns. The false twist mechanically imparted to the thermoplastic yarns, whether achieved via the continuous single heater process or the more costly and inefficient batch process familiar in the industry prior to the extremely wide acceptance of these patents, enables the knitted finished product to display the bulk and elasticity so characteristic of the fabrics manufactured from natural fibers.

[4] "Throwing is the business of processing yarns consisting of continuous filament fibres and those who are engaged in it are known as throwsters." Ernest Scragg & Sons Limited v. Leesona Corp., in the Exchequer Court of Canada, No. 143,891, at 9.

Georgetown Silk Company, and it was during this period that their experiments in this area were first conducted jointly. In 1938 they became separated because of Stoddard's promotion and transfer to another plant, although Seem has testified that communication between the two continued. They were reunited in Philadelphia six years later, at which time the experiments resumed and a loose partnership was formed between Seem and Stoddard, the inventors, and Fred Tecce and Harold Berger, the financiers. With this partnership arrangement set up, the two inventors were able to construct and operate two successive bench models between 1944 and 1947, the latter of which incorporated "the entire apparatus as a first step toward construction of a full-scale commercial size machine."[5] Experimentation on the scale model continued for the next several years, during which time Berger and Tecce sold their hosiery mills and started a throwing operation called Marionette Mills.

After moving their equipment to a protected area at the Marionette location in 1950,[6] Seem and Stoddard borrowed a demonstration up-twister for conversion into a full-scale production model and moved it into the plant. Ten of the forty spindle[7] positions were converted to "single heater" false twisters with the conversion being completed in July

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[5] Memorandum of Leesona In Opposition to Motions by Sauquoit Fibers Company and the New York Throwsters for Partial Summary Judgment at 16.

[6] Seem, prior to this move, had sold his interests in Synthetic Yarns, Inc., a throwing company located in Massachusetts, to the company's attorney, Archibald Graustein. The significance of this sale will be apparent following the discussion on the next page.

[7] The spindle is a portion of the false twist machinery, designated as capital P in figure 1 of the diagram of the '108 patent apparatus attached as Appendix A. When used in connection with a particular model, it indicates the total number of separate means for processing the yarn, each spindle increasing arithmetically the amount of yarn that may be processed at the same time on the same machine.

of 1950. This machine was operated on an experimental basis for several months, but was dismantled and returned to its owner when the Permatwist partners decided to build eight full-size machines and operate them in the yet-to-be-constructed basement of Marionette. In fact only one machine was actually built—an Atwood 220 spindle uptwister—and moved to the basement. The machine was not completed until early 1952. About this same time Mr. Seem mentioned to a representative of Synthetic Yarns that he had developed this particular machine and the methods to operate it to produce stretch yarn from thermoplastic yarn in a continuous fashion,[8] and a visit from four Synthetic Yarn representatives was arranged for May 20, 1952 at which time Permatwist "made it a point to have [the machine] covered and running and in real good shape with yarn so that the demonstration would be impressive." Following some further negotiations with Synthetic's owners over the next few months, Permatwist entered into an agreement on December 15, 1952 with Synthetic Yarn that provided Synfoam, Inc. with a license to use the false twist process.[9]

II

Before the facts, as summarized briefly above, can be interpreted under the § 102(b) tests, it is necessary to conclude that this early disposition is both possible and proper. Rule 56 of the F.R.Civ.P. provides that after a time period not herein relevant

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[8] Mr. Seem testified in the Canadian litigation that the announcement was made to Mr. Steedman of Synthetic Yarns after Mr. Steedman told him "that Synthetic Yarns had been offered a license under certain French patents owned by French people, patents that originated in France."

[9] The agreement entered into by Permatwist and Synfoam is a 30 page document the first six paragraphs of which are reproduced as Appendix B. The entire document is Exhibit 14 to the Sanquoit motion for partial summary judgment.

> . . . The judgment sought shall be rendered forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any *material fact* and that the moving party is entitled to a judgment as a matter of law. (emphasis supplied)

The Courts must be wary of granting motions for summary judgment unless both of these requirements are met because it naturally deprives the resisting party of the right to a full "trial" on the merits. However if the requirements are met, the motion should be decided. *See* Insurance Company of North America v. Bosworth Construction Co., 469 F.2d 1266 (5th Cir. 1972); Burleson v. Mead Johnson & Co., 463 F.2d 180 (5th Cir. 1972). It is admitted that neither of these cases involved the validity of patents, but the application of the rule would not, and should not, vary. Leesona cites Ag Pro, Inc. v. Sakraida, 437 F.2d 99, 101 (5th Cir. 1971), finding on remand rev'd, 474 F.2d 167 (5th Cir. 1973), for the proposition that "[s]ummary judgment is the rare exception, see Ronel Corporation v. Anchor Lock of Florida, Inc., 5 Cir. 1963, 325 F.2d 889, and not the rule in patent infringement cases." Of course that decision reversed a summary judgment determination of invalidity based on the test of "obviousness", a much more factually oriented inquiry than the § 102(b) tests. "Thus obviousness is a question of law *determined against the factual background of the state of the prior art and the claimed improvement on it.*" Stamicarbon N.V. v. Escambia Chemical Corp., 430 F.2d 920, 924 (5th Cir. 1970), quoted with approval in *Ag Pro, supra.* (emphasis added). In the appropriate circumstances even the "obviousness" test may be applied in a summary judgment decision. *See* Inject-O-Meter Mfg. Co. v. North Plains Fertilizer & Chemical, Inc., 439 F.2d 1138, 1139 (5th Cir. 1971).

With these precautions in mind then, the Court is of the opinion that if summary judgment can ever be justifiable in patent litigation, it is justifiable here where the determi-

nation is not made against an uncertain factual background.[10] *See* Strong v. General Electric Co., 434 F.2d 1042 (5th Cir. 1970), aff'g mem. 305 F.Supp. 1089 (N.D.Ga. 1969), cert. denied, 403 U.S. 906, 91 S.Ct. 2207, 29 L.Ed.2d 681 (1971).

III

While the test set forth in § 102(b) is easy to comprehend, a short summary if its parameters is essential before applying it to the particular facts involved in this instance. The date that this decision revolves around is January 4, 1953—the "critical date". The statute allows an inventor one year's leeway following the completion of this invention to file the application for a patent, and in this instance the application was made on January 4, 1954. Prohibited under subsection b are both "sales" and "public uses", and a single instance of either before the critical date may result in an invalid patent. Consolidated Fruit Jar Company v. Wright, 94 U.S. 92, 24 L.Ed. 68 (1877); Hobbs v. United States Atomic Energy Commission, 451 F.2d 849, 857 (5th Cir. 1971); Strong v. General Electric Co., *supra*, 434 F.2d at 1046-1047. Although the two separate statutory bars derive from a common purpose, Woodbridge v. United States, 263 U.S. 50, 55-56, 44 S.Ct. 45, 68 L.Ed. 159 (1923); Cali v. Eastern Airlines, Inc., 442 F.2d 65 (2d Cir. 1971); Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts Co., 153 F.2d 516, 520 (2d Cir. 1946), cert. denied 328 U.S. 840, 66 S.Ct. 1016, 90 L.Ed. 1615, the standards employed in each are not identical In this Circuit "[t]he mere existence of a sales contract is insufficient to establish a placing 'on sale'. The invention that is the subject of the sale must be a reality in the sense that it must be beyond the stage of experimentation." *Hobbs, supra* 451

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[10] "The district court incorrectly treated the question of *novelty* solely as one of law without proper consideration of pertinent factual background." Van Gorp Mfg., Inc. v. Townley Industrial Plastics, 164 F.2d 16, 18 (5th Cir. 1972).

F.2d at 859. Some courts have indicated that they will not, in applying the "on sale" test, be bound by the "overly-refined distinctions" of commercial law, Philco Corp. v. Admiral Corp., 199 F.Supp. 797, 817 (D.Del.1961), but the *Hobbs* case leads this Court to believe that reference to a type of "general contract law" in order to determine what amounts to a sale is the better part of discretion, especially when the decision is made in the granting of a summary judgment motion. *Hobbs, supra* 451 F.2d at 857, n. 4.[11]

To establish the "public use" defense, the potential infringer may proceed in either of two ways: (1) demonstrate to the Court that some person (not necessarily the inventor) has made a nonsecret, nonexperimental use of the invention prior to the critical date; or (2) establish the fact that the inventor has used the patent for trade and profit, whether the use has been secret or not.[12] The former derives from Pennock v. Dialogue, 27 U.S. (2 Pet.) 1, 7 L.Ed. 327 (1829) and followed by Bates v. Coe, 98 U.S. 31, 25 L.Ed. 68 (1878); Smith & Griggs Mfg. Co. v. Sprague, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141 (1887); General Talking Pictures Corp. v. Western Electric Co., 304 U.S. 175, 58 S.Ct. 849, 82 L.Ed. 1273 (1938); Electric Storage Battery Co. v. Shimadzu, 307 U.S. 5, 59 S.Ct. 675, 83 L.Ed. 1071 (1939), and the latter from Macbeth-Evans Glass Co. v. General Electric Co., 246 F. 695 (6th Cir. 1917). That

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[11] The reliance in this opinion on Hobbs v. United States Atomic Energy Commission supra is not meant to indicate an unawareness of the case law relating to § 102(b) so ably developed by the United States Courts of Appeals for the Second and Third Circuits, from whose jurisdiction these cases originally came. Rather it only serves as a manifestation of this Court's understanding that the test of invalidity as set forth in Hobbs, and the Fifth Circuit in gneral, is somewhat more rigorous than the test that would have been applied by the original transferor district. The briefs of the moving parties in the cases cited therein demonstrate the slightly increased burden placed on the moving parties by Hobbs.

[12] In this regard see the discussion of the inventor-third party dichotomy by the panel in *Hobbs*, 451 F.2d at 859-860.

decision has been followed by the Second Circuit in *Metallizing Engineering, supra,* along with several other circuits in later cases, although the Fifth Circuit does not appear to have expressly adopted the holding.

Implicitly accepted in the discussion of the "on sale" and "public use" defenses is the qualification that neither of the two may be shown to exist while the invention is still in the experimental stage. City of Elizabeth v. American Nicholson Pavement Co., 97 U.S. 126, 24 L.Ed. 1000 (1878).

> A use which is primarily experimental and no more than incidentally for trade or profit is not a public use. *E. g.* Smith & Griggs Mfg. Co. v. Sprague, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141 (1887). This is the so called experimental use exception". Viewed in light of the policy underlying the public use provision, however, it is no exception at all. A bona fide experimental use involves no commercial exploitation.

Pickering v. Holman, 459 F.2d 403, 406 (9th Cir. 1972). *See Hobbs, supra* 451 F.2d at 859.

Summarized as it is above, the task the Court has been called on to perform in applying the law to the facts as developed in the pleadings, affidavits, depositions and interrogatories should be fairly clear-cut. There are, however, two areas of disagreement that need to be resolved before any decision can be made.

a). The first disagreement relates to the question of who has the "burden of proof" to establish the disputation of a material fact.[13] The moving parties argue that they

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[13] The usage of the term "burden of proof" in this argument is somewhat confusing since it can have two different applications, and each party is using it in a different way. The New York plaintiffs mention it in discussing the motion for summary judgment and the opponent's burden, while Leesona dwells on the burden of proof that § 282 places on one challenging the validity of a patent. The discussion following has attempted to analyze each in its appropriate sphere.

have shown a *prima facie* case of invalidity, making it incumbent on Leesona, the patent owner party, to come forward and show to the Court that there exists a material question of fact concerning the experimental condition of the invention during 1952. This of course would make a summary judgment decision premature. Leesona counters this argument by reminding the Court of the burden—and a heavy one it is, Eagle Iron Works v. McLanahan Corp., 429 F.2d 1375 (3rd Cir. 1970)—that one must bear in requesting a declaration of patent invalidity, with the extrapolation of this argument being the assertion that the burden cannot shift to Leesona. This argument is a *non sequitur*.

The Court is not concerned specifically with the presumption of validity that is mandated by Section 282 of Title 35, United States Code, or with the burden of proof arising thereunder. The Fifth Circuit case law makes it clear that the burden that must be borne by one who would seek to invalidate a patent will bring to their knees all but the most indomitable opponents,[14] but that is not the issue here. The request for a summary judgment puts the movant to an even more severe test—he must show not only that § 102(b) has been violated by "clear and convincing evidence" or "beyond a reasonable doubt", but as a matter of law. If the Court, after reviewing the evidence gathered and the pleadings submitted so far, is convinced that there

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[14] That, however, is about all that they make clear. To borrow from Judge Wisdom's comments in *Hobbs:*

> . . . The presumption of patent validity is rebuttable. 35 U.S.C. § 282; Radio Corp. of America v. Radio Engineering Laboratories, 1934, 293 U.S. 1, 55 S.Ct. 928, 79 L.Ed. 163. The courts, however, have not distinguished themselves for consistency in their determination of the quantum of proof necessary to rebut the presumption . . .

Hobbs v. United States Atomic Energy Commission, 451 F.2d 849, 856 (5th Cir. 1971). *See* Harrington Mfg. Co., Inc. v. White, 475 F.2d 788, 793 (5th Cir. 1973) and Railex Corp. v. Speed Check Co., 457 F.2d 1040 (5th Cir. 1972).

are no material facts in dispute and that there has been the requisite showing of a sale or public use, the opponent of the motion has clearly failed to meet his "burden" set forth in Local Rule 10(J)(2) which requires that:

> . . . The papers opposing a motion for summary judgment shall include a memorandum of law, necessary affidavits, and a concise statement of the material facts as to which it is contended that there exists a genuine issue to be tried. All material facts set forth in the statement required to be served by the moving party will be deemed admitted unless controverted by the opposing party's statement.

See, e.g., Atlas v. Eastern Air Lines, Inc., 311 F.2d 156, 160 (1st Cir. 1962); National Biscuit Co. v. Crown Baking Co., 105 F.2d 422, 425 (1st Cir. 1939); and Minnesota Mining & Manufacturing Co. v. Kent Industries, Inc., 274 F.Supp. 993, 997 (E.D.Mich. 1967), aff'd, 409 F.2d 99 (6th Cir. 1969). Whether the parties have met their respective "burdens" will be discussed below.

b). A decision was rendered on February 28, 1964 by President Thorson in Ernest Scragg & Sons Limited v. Leesona Corporation, *formerly known as Universal Winding Co.*, in the Exchequer Court of Canada, No. 143,891 [hereinafter referred to as Exchequer Opinion], holding the Canadian counterparts of the '105, '108, and '109 [respectively 552,105, 552,103, and 552,104] valid and infringed. The main dispute in that litigation centered around the date of the inventions defined by the claims in issue. The applications for the Canadian patents were filed on September 27, 1954, although to prevail Leesona had to prove a date some years prior to that filing date. In the opening discussion of the opinion, the judge noted that "it is asserted on behalf of the defendant [Leesona] that the inventions in issue were in fact made in July, 1947."

Exchequer Opinion at 8.

To some extent the Court has relied on various findings made by that Court relating to the actual completion date of the inventions. In that case it was to Leesona's advantage, as the assignee of the patents awarded to Mr. Seem and Mr. Stoddard, to urge the earliest invention date possible in order to qualify Seem and Stoddard as the original inventors. Leesona prevailed and evidently convinced that court as follows:

> . . . In my opinion, the 10-spindle false twist conversion that was completed in July, 1950, was simply a full scale commercial exemplification of the invention that Mr. Seem and Mr. Stoddard had made in July, 1947 or shortly thereafter.

Exchequer Opinion at 29.

In order to assure the success of this finding Leesona constantly attempted to minimize the effect of the various minor changes and substitutions that were sometimes carried out during the time that the different models were being run. As the court found,

> . . . There were some differences between [the machines built for Synfoam] and the single 220-spindle machine, as I have already set out, but there were no differences in the essentials and no difference in their functioning.

Exchequer Opinion at 31-32.

With the motions before this Court now alleging the invalidity of the patents based on the § 102(b) tests, Leesona retreats from its previous position and now urges that the inventions were still in their experimental stages during this six year period prior to the critical date. The opposition to the summary judgment motions goes to great lengths to pick out those portions of previously taken depositions in order to prove that the inventions were not considered perfected until sometime in 1953. The Court, however, finds Leesona collaterally estopped to deny the findings of the Exchequer Court and for that reason cannot give Leesona's argument of experimental use any credence.

One definition of the doctrine relied on here has been provided by Professor Moore:

> . . . The essence of collateral estoppel by judgment is that some question or fact in dispute has been judicially and finally determined by a court of competent jurisdiction between the same parties or their privies. Thus the principle of such an estoppel may be stated as follows: Where there is a second action between parties, or their privies, who are bound by a judgment rendered in a prior suit, but the second action involves a different claim, cause, or demand, the judgment in the first suit operates as a collateral estoppel as to, but only as to, those matters or points which were in issue or controverted and upon the determination of which the initial judgment necessarily depended.

1B Moore's Federal Practice ¶ 0.441[2] (2d ed.), p. 3777 (footnotes omitted). Leesona, of course, is the same party that was involved as a defendant in the case in Canada. As to the opposing parties in this proceeding, the Court is convinced that if privity is still necessary, it can be found here in the substantial identity of the patents in suit both in Canada and the United States. A finding of privity is superfluous, however, since collateral estoppel no longer appears to hinge, especially in federal question cases such as this, on the old doctrine of mutuality. *See, e.g.*, Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation, 402 U.S. 313, 324-326, 91 S.Ct. 1434, 28 L.Ed.2d 788 (1971); James Talcott, Inc. v. Allahabad Bank, Ltd., 444 F.2d 451, 461-463 (5th Cir. 1971); Rachal v. Hill, 435 F.2d 59, 61-63 (5th Cir. 1970), cert denied, 403 U.S. 904, 91 S.Ct. 2203, 29 L.Ed.2d 680 (1971); Seguros Tepeyac, S. A. Compania Mexicana v. Jernigan, 410 F.2d 718, 727 (5th Cir. 1969), cert denied, 396 U.S. 905, 90 S.Ct. 219, 24 L.Ed.2d 181 (1969); Herbert Rosenthal Jewelry Corp v. Zale Corporation, 323 F.Supp. 1234, 1237 (S.D.N.Y. 1971).

The determination made by the Canadian Court concerning the date of invention and the date of reduction to prac-

tice was necessary for that judgment—the dates were both in issue and controverted. The application of the collateral estoppel bar is appropriate, Poster Exchange, Inc. v. National Screen Service Corp., 456 F.2d 662, 666 (5th Cir. 1972), but only if Canada meets the test of comity set down by the Supreme Court in Hilton v. Guyot, 159 U.S. 113, 16 S.Ct. 139, 40 L.Ed. 95 (1895). Canada does meet that test. The result will be somewhat unusual in this instance in that the fact finding made by President Thorson that allowed Leesona to prevail against Scragg contribute to Leesona's failure here, but the collateral estoppel theory serves the same salutory objectives without regard to the final outcome. *See generally* Wilson v. Retail Credit Co., 474 F.2d 1260 (5th Cir. 1973).

IV

Based on all this preliminary discussion, then, the Court is called upon to review all of the facts presented in order to determine whether a material fact still remains in dispute, and if not, whether the patents are invalid as a matter of law. In accordance with the local rules of this Court, the movants have submitted proposed findings of material fact as to which they assert there is no genuine issue. These facts are summarized in paragraphs 1-14 of Appendix A of the motion by the New York plaintiffs. As was required by those same rules, Leesona, in its opposition to the motion, listed those material issues of fact as to which there does exist a genuine issue of fact to be tried, with that listing comprising paragraphs 1-11. None of those paragraphs directly controverts the facts submitted by the moving parties. Following the procedures outlined in Local Rule 10(J)(2), the Court must consider paragraphs 1 through 14 admitted by Leesona.

a). The material issues of fact listed by Leesona will be dealt with one by one, since they purport to demonstrate to the Court that summary judgment is not proper now. The

first issue is "[w]hether or not the partnership of Warren A. Seem, Nicholas J. Stoddard, Harold P. Berger, and Fred D. Tecce, the Permatwist Company, was formed for the purpose of bringing to completion the development of Stoddard's and Seem's false twist process." According to Mr. Berger's testimony and Leesona's own memorandum, a "loose partnership" was formed in 1944. Even assuming that the issue as phrased was decided in Leesona's favor it would have no effect on the outcome of this motion. Having already admitted sufficient facts to justify a conclusion that the invention embodied in the '105, '108 and '109 patents was "on sale" prior to the critical date, the only material fact is whether the invention was still in the experimental state in order to negate the otherwise invalidating effect of the sale.

b). As to the issue of whether the 1947 bench model was experimental in character, the moving parties are willing to concede, for the purpose of this decision, that the model was experimental. That has no relevancy, however, since we are concerned with an admitted sale in 1952.

c). Leesona next poses the same question in relation to the Fletcher uptwister used in 1950. For the same reason that was stated above the issue is irrelevant. Even if that issue was decided in Leesona's favor it would not affect the resolution of this motion.

d). The fourth question posed must be quoted to appreciate the full scope of it:

> Whether various actions and statements by the Permatwist partners (a) show intent to sell or market the inventions immediately or (b) indicate confidence that the process would eventually be developed for commercial production and use.

The question as framed is much too expansive—the Court is concerned with the narrow time frame around the sale of the invention. Statements made by the inventors or their

partners prior to 1952, if they indicated the latter, would not be relevant to the intent of the partners during 1952 because the invention could obviously have lost its experimental qualities in the intervening period prior to May 20, 1952. Rephrasing the question in light of this the question should contain the words "during 1952" after "partners" in the second line.

After this bit of semantic gymnastics is Leesona in any better position to resist the granting of this motion? I think not. The test as set forth in *Hobbs* requires only (1) a sale of an invention that (2) is no longer at the experimental stage. *Hobbs, supra* 451 F.2d at 859. Already satisfied is the first requirement; the whole thrust of this motion is directed toward a determination of the second. It could be persuasively argued that a determination of "[w]hether various actions and statements by the [inventors] . . . indicate confidence that the process would eventually be developed for commercial production and use" would contribute not one whit towards answering the primary question. However, even assuming that the "actions and statements" of the inventors could assist the Court in finding an invention "experimental", no such assistance is found here. At the urging and insistence of Leesona, the Canadian judge ruled that

> The fact that Mr. Seem and Mr. Stoddard continued to work on [the bench model] and its accompanying equipment and make further experiments does not affect the fact that they had made the invention of the apparatus defined in Claim 3 at the asserted date. They were obviously anxious to make improvements. When they had satisfied themselves, as they did, that they could use the apparatus that they had invented to produce very satisfactory stretch nylon yarn that was permanently crimped and more uniform in appearance than nylon yarn produced by the step-by-step process and that knitted fabric made from it could stand washing and boiling and still maintain its uniform crimp they proved that it was possible

> to put their invention into full scale commercial operation when they completed the false twist conversion of the 10 spindles of the 40-spindle up-twister that they had borrowed from the Fletcher Works. In my opinion, the 10-spindle false twist conversion that was completed in July, 1950, was simply a full scale commercial exemplification of the invention that Mr. Seem and Mr. Stoddard had made in July, 1947 or shortly thereafter.

Exchequer Opinion at 29-30.

Leesona further made the representation that

> By the latter part of July 1950 Seem and Stoddard had converted ten positions, or spindles, of this machine to false twist operation. This machine, constructed in July of 1950, include[d] all of the elements of Claim 3 of Patent 552,105 [Canadian counterpart of '105] and its operation practice[d] the process of Claims 1, 2, 3, 5 and 8 of Patent 552,104 [Canadian counterpart of '109] .... This 1950 machine produced very satisfactory permanently crimped stretch nylon.[15]

There are many other examples of actions and statements by the Permatwist partners, although not recited here, that conclusively establish that the practice of the invention prior to 1952 was "mainly for the purposes of trade and profit, and the experiment [was] merely incidental to that ...." Smith & Griggs Mfg. Co. v. Sprague, 123 U.S. 249, 256, 8 S.Ct. 122, 126, 31 L.Ed. 141 (1887). *See* Pickering v. Holman, 459 F.2d 403, 406 (9th Cir. 1972). Any material fact raised by that question, if indeed there is one, cannot be disputed.

e). Next Leesona argues that a jury must decide "[w]hether the first 220-spindle machine converted in the basement of Marionette Mills, Inc., (a) was used as part of a sales program or (b) was used only in connection

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[15] Exhibit 3 to Sauquoit Fibers Motion for Partial Summary Judgment at 17. [hereinafter referred to as Sauquoit Exhibit]

with continuing experimentation and development of the false twist process." This question cannot justify a denial of the motion. If the Court were to assume that the two subparts were mutually exclusive, as they were obviously designed to be, then of course it would have to instruct the jury that it must find the existence of subpart *a* since Leesona has already admitted that the machine was used to establish a business relationship with Synfoam. However they need not be mutually exclusive but for the use of the word "only"—one may use an invention as part of a sales program while continuing experimentation. Even in that instance, though, the question would not be relevant unless subpart (b) was worded in this fashion:

> (b) was used primarily in connection with continuing experimentation and development of the false twist process related solely to the patented features of the invention and only incidentally for trade and profit.

With the question posed thusly, analysis of this material fact can be examined to see if a dispute is justifiable. There is no question that the 220-spindle machine embodied the inventions in litigation here. In many instances, either in previous depositions or pleadings, the Permatwist partners have acknowledge the identity of the two. The 220-spindle machine was, after all, the machine used by them to demonstrate the invention to Synfoam.[16] Even if that were not the case, the failure to controvert the material fact that the machine would constitute an infringement if used during the life of the patents affirmatively establishes the embodiment. In the Canadian litigation Leesona argued to the Court that

> . . . Construction of the single 220 spindle machine was started early in 1951 and was completed the early part of 1952 in that basement. The machine still re-

[16] *Sauquoit Exhibit* at 11.

mains in the basement in operation in the same location it had when completed early in 1952.[17]

The Court adopted that argument when it noted that the machine was "completed in the spring of 1952. . . . And it [was] clear that on May 20, 1952, the date of the secret disclosure, Mr. Seem showed the machine in operation to the representatives of Synthetic Yarns Inc. and described its parts."[18] These representations by Leesona were not made without the consent of the inventors, but were based on the testimony given by Mr. Seem and his partners in that litigation.[19]

Leesona cannot have it both ways. It has not only failed to show that the continuing experimentation on the false twist process related to the invention revealed in these patents, but it has utterly ignored the cardinal prerequisite that any use for trade and profit be only incidental to the experimental use, if any.[20]

f). The sixth question posed by Leesona in its opposition to the two separate motions for partial summary judgment involves the demonstration of the 220 spindle machine to the four representatives of Synthetic Yarns on May 20, 1952—was it carried out in secret? The issue is legally irrelevant to the motion by the New York plaintiffs; they rely only on the fact that the invention was on sale and the

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[17] *Sauquoit Exhibit* at 21.

[18] *Exchequer Opinion* at 30-31.

[19] Memorandum of Points and Authorities In Support of New York Plaintiffs' Motion for Summary Judgment at 16.

[20] The Ninth Circuit Court of Appeals has remarked recently that "[a] bona fide experimental use involves *no* commercial exploitation." Pickering v. Holman, 459 F.2d 403, 406 (9th Cir. 1972) (emphasis supplied). While this may be somewhat strong, it nonetheless serves to emphasize the duty of the patentee to come forward to dispell any doubt concerning the invention's use for trade or profit.

Hobbs decision makes it crystal clear that secrecy is just not a consideration.

> . . . His argument is basically an attempt with no support from precedent to construe the statute so that "public" in the phrase "in public use or on sale" modifies not only "use" but also "sale". This unrealistic construction has been urged elsewhere and rejected. Piet v. United States, 1959, S.D.Cal., 176 F.Supp. 576, aff'd 9 Cir. 1960, 283 F.2d 693. We cannot attach any relevance to any conditions of secrecy which may have existed at the time the G valve was placed "on sale."[7]

451 F.2d at 860.

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[7] Secrecy may be relevant to the issue of "public use." *See* Kardulas v. Florida Machine Products Co., 5 Cir. 1971, 438 F.2d 1118; Watson v. Allen, 1958, 103 U.S.App.D.C. 5, 254 F.2d 342.

As the above quote indicates, the Court states that the issue "may be" relevant to the motion by Sauquoit, relying as it does on both the "on sale" and in "public use" provisions of § 102(b). In this instance, however, whether the demonstration was carried out in secret is both irrelevant and immaterial, and can be no justification for denying the motion as it relates to the "public use" defense. Leesona argues that there cannot be a "public use" when the disclosure was protected by securing a promise of secrecy, citing both *Kardulas* and *Watson, supra. Kardulas* is not authority for this statement. Judge Dyer remarked there that

> . . . The use may be public where it is exposed to persons other than the inventor, including customers and salesmen, who are under no obligation of secrecy, Watson v. Allen, . . . and where no attempt is made to keep the device from the knowledge of the public.

438 F.2d at 1123-1124. This obviously was not the holding of that case, and does not necessarily support the converse

of the statement, i. e., that a use may not be public where it is exposed to persons other than the inventor who are under an obligation of secrecy. That comment in *Kardulas*, intended as a short introduction to the law of public use, was correct as far as it went, but just did not go far enough. The citation to *Watson* is also of no help. Judge Burger (now Chief Justice) stated, in an attempt to summarize the law on public use, that

> . . . It may be fair to conclude that public use exists where the invention is used by, or exposed to, anyone other than the inventor or persons under an obligation of secrecy to the inventor.[8]

254 F.2d at 345. In the footnote to that sentence, it continued:

> 8. Use by persons under an obligation of secrecy to the inventor is probably not public use. See National Tube Co. v. Steel & Tubes, Inc., 3 Cir., 1937, 90 F.2d 52. Cf. Journeaux, Public Use in Private or Vice Versa, 23 J.Pat.Off.Soc'y. 514 (1941), who states "With due caution it may be considered that an invention is in public use when it is used openly by the inventor for its intended purpose and also when it is used by anyone beyond the control of the inventor." . . .

254 F.2d at 345. Not only was this dicta, because the Court went on to hold that the use in question was still experimental [primarily?], but the dicta was clearly labelled as such by insertion of the word "probably" in the footnote. Obviously Journeaux's admonition to use "due caution" in stating a test for establishing a public use was not heeded—his summary does not even mention secrecy as an element.

The *National Tube* case cited in that footnote did make the following finding in a similar situation:

> . . . This testimony reveals that Mr. Smith, a representative of Johnston, demonstrated to him several

> small pieces of tubing manufactured by the Johnston process *without, however, disclosing the process.* These demonstrations were made preliminary to the execution of a contract with Mr. Simmons in which he was given exclusive right to use these inventions in the manufacture of bedsteads and allied articles. The process was disclosed to Mr. Simmons in the contract which bound him to secrecy. The showing of these pieces of tube to Mr. Simmons and the demonstration of their fitness for his use *without disclosing the process* did not amount to public use. The defendant did not bear the burden required of him in establishing prior public use for more than two years prior to the application for the patent. The Barbed Wire Patent, 143 U.S. 275, 285, 12 S.Ct. 443, 450, 36 L.Ed. 154.

90 F.2d at 54 (emphasis added). Because the process was not disclosed, the finding loses much of its impact here. In any event, the case appears to have been overruled *sub silentio* in U. S. Chemical Corp. v. Plastic Glass Corp., 243 F.2d 892 (3d Cir. 1957) where, prior to the *Watson* decision, the panel, by Chief Judge Biggs, adopted the Second Circuit's view of the "public use" defense when it said:

> The issue is what is a public use or sale within the purview of the statute. This question was cogently discussed by Judge Learned Hand in the Metallizing Engineering Co. case, supra. We can add little of value to what Judge Hand said in the cited decision. We are in accord with what he stated. . . .

243 F.2d at 894.

As was discussed earlier, one of the statements made by Judge Hand in the *Metallizing* case was that the public use defense has two facets: (1) it exists when anyone, the inventor or a third party, practices the invention in a non-secret, nonexperimental fashion prior to the critical date; or (2) it exists when the inventor practices the invention for trade or profit whether the use has been secret or not. Metallizing Engineering Co., 153 F.2d at 520. *See* Robine

v. Apco, Inc., 386 F.2d 267, 269 (2d Cir. 1967); Macbeth-Evans Glass Co. v. General Electric Co., 246 F. 695 (6th Cir. 1917). Judge Hand went on to say:

> It is indeed true that an inventor may continue for more than a year to practice his invention for his private purposes or his own enjoyment and later patent it. But that is, properly considered, not an exception to the doctrine, for he is not then making use of his secret to gain a competitive advantage over others; he does not thereby extend the period of his monopoly. Besides, as we have seen, even that privilege has its limits, for he may conceal it so long that he will lose his right to a patent even though he does not use it at all.

153 F.2d at 520. That certainly is not the situation here.

Whether the disclosure to the Synthetic Yarn representatives on May 20, 1952 was secret or not is irrelevant to a decision on either of the two motions, so this question is not a material fact in issue.

g). Question No. 7:

> Whether the demonstration of the 220-spindle machine to representatives of Synthetic Yarns, Inc., on May 20, 1952, was part of a sales effort or (b) was for the purpose of obtaining additional assistance to aid in further development of the false twist process.

This proposed "material issue" suffers from the same malady affecting question 5. Subpart *b* should read:

> (b) was used for the purpose of obtaining additional assistance to aid primarily with continuing experimentation and further development of the false twist process related solely to the patented features of the invention and only incidentally for trade or profit.

This, however, is not the only fatal disease infecting the question. By constructing the question in this way Leesona hopes to make the subparts mutually exclusive, when in

fact they need not be. The demonstration could have been part of a sales effort, but the "on sale" defense wouldn't materialize unless the invention was through the experimental stage. The sales effort is conceded. The only remaining portion concerns whether the demonstration was made in hopes of "obtaining additional assistance to aid with continuing experimentation . . . related solely to the patented features of the invention . . . ." The burden is on Leesona to establish the experimental exception and it has not met that burden.[21]

> . . . But for this [experimental] exception to be applicable, the use must be an experiment on the patented device itself and not a use of the patented device in connection with experiments on other devices. A. Schrader's Sons, Inc. v. Wein Sales Corp., 9 F.2d 306 (2 Cir. 1925). Once it has been established that the invention itself functions satisfactorily, the one-year limit on commercial use applies, and the inventor should not be allowed to evade this limit by performing further tests on nonpatented features of the machine in which his invention is incorporated.

Robine v. Apco, Inc., 386 F.2d 267, 269 (2d Cir. 1967). The evidence relied on by Leesona is really no evidence at all—it amounts to nothing more than a citation to a law review note that states

> . . . In a borderline case where it is unclear whether the invention has been reduced to practice, the inventor's purpose becomes an important consideration.

Note, New Guidelines for Applying the On Sale Bar to Patentability, 24 Stan.L.Rev. 730, 744 (1972), and the recent deposition testimony of the Permatwist partners and their associates. The Ninth Circuit said it all when it affirmed a summary judgment of invalidity in Super

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[21] *See* pp. 80-81 *supra.*

Mold Corp. v. Clapp's Equipment Division, Inc., 397 F.2d 932, 934-935 (9th Cir. 1968):

> Super Mold admits the facts as recited above [concerning a sale to Sears], but it claims, notwithstanding, that [the inventor's] testimony in his deposition that "[t]he sale and use of my thread aligners to Sears was a good faith use for experimental purposes and not a public use" created a genuine issue of material fact. We cannot agree. . . . [The inventor's] testimony concerning his subjective intent has no probative force when weighed against the overwhelming objective evidence to the contrary.

See, e. g., Smith & Griggs Mfg. Co. v. Sprague, 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141 (1887); Atlas v. Eastern Air Lines, Inc., 311 F.2d 156, 160 (1st Cir. 1962); Minnesota Mining & Mfg. Co. v. Kent Industries, Inc., 274 F.Supp. 993, 998 (E.D.Mich.1967).[22]

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[22] The self-serving comments of the inventors should be given even less weight when those associated with them disclaim any independent recollection occurrences or conversations taking place during the time frame in question. Although extended citation to the many deposition pages of the numerous witnesses deposed during this discovery period to indicate just how pervasive the lapse of memory has been would serve little purpose, one example may prove illuminating. This colloquy took place concerning events in 1966, but it amplifies a condition that has been more or less symptomatic throughout the entire discovery process.

> THE COURT: Mr. ————, it is perfectly proper for Mr. Irons to keep repeating these questions because either you are not being candid and forthright in your testimony when you testify to a total lack of recollection or your total lack of recollection would raise serious doubt about your competence to serve as an attorney.
>
> Now, I do not want you to argue with Mr. Irons any more. If he repeats a question a second or third time, simply answer it. I need no observations from you as to whether the questions are repetitious.
>
> Now, I would also suggest to you that you be a little more honest in your testimony here.

h). The eighth proposed material fact issue fails for the same reason that the fifth and seventh proposed issues fail. For the question to be of any relevance at all it must focus in on the experimental exception, and that it does not do. Even if it did, however, it is impossible for Leesona to

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THE WITNESS: Your Honor, I am being perfectly honest.

THE COURT: I am noting for the record that insofar as my observation is concerned, you are not being candid. Now, you will simply continue to testify.

THE WITNESS: Your Honor, I resent that. I am being perfectly honest.

THE COURT: You may resent it, Mr. ————. I am suggesting to you that you are not being candid and forthright.

THE WITNESS: And I think you are being perfectly unfair in accusing me of being dishonest about my recollection of what happened in 1966, Your Honor. I have tried to be as honest as I can possibly be in these proceedings, and I have no recollection of what I did six years ago.

THE COURT: Fine, then you continue so to testify. I am noting for the record my observation that in my view you are not being candid and forthright in your testimony. If you persist, that is your answer, you do not recollect.
You may continue, Mr. Irons.

* * * * *

THE WITNESS: Your Honor, with all due respect, and this is why I think that maybe we are having a problem here, I have just been handed an agreement that I have not reviewed—as I say, I have never ever in my life been accused of being dishonest.

THE COURT: You have been accused today either—

THE WITNESS: Yes, sir, the first time in my life.

THE COURT: —either of lacking forthrightness and candor in your testimony or of suffering from such a lack of recollection that it raises serious doubt as to your competence to serve as an attorney, and I stand on that. You may take all the time you wish to review that document.

THE WITNESS: Sir, you do not understand, maybe I—

THE COURT: I am simply suggesting to you take the time that it takes to review that document in order to be able to answer the question.

show that that exception has any application to these activities. *See* subparts e and g *supra.*

i). Question 9, concerned as it is with whether the uses of the patented process prior to the critical date were in secret is irrelevant under the law of "public use", since the uses were commercial in nature. *See* subpart f *supra.*

j). The next question relates primarily to the "public use" defense. It is directed to a determination of whether or not the apparatus and/or process were used in commercial production before the critical date. Leesona states that "[i]f the quality of the yarn was not suitable for successful use in garments, the inventions were not commercially viable." With this test in mind, the Court need only look at Leesona's arguments to the Canadian court:

> It is abundantly clear from the agreement signed May 20, 1952 by the four employees of Synthetic Yarns Inc., Z-166, that a machine was in being and operating at Marionette Mills, Coatesville, Pennsylvania, on May 20, 1952. It is also clear that that machine was a false twist machine for the manufacture of stretch yarn by a continuous process. That the machine and process were successful is established by the fact that Synthetic Yarns Inc. arranged for the purchase of six machines and The Permatwist partners decided to build seven additional machines to complete the installation they originally contemplated. (Seem, Vol. 27, p. 3696, l.-3-12.) As further proof of the existence of this machine, defendant entered as its Ex Z-163, Z-164 and Z-165 samples of fabric knit from yarn produced on the 220 spindle machine in the early summer of 1952. . . .[23]

Based on these and many similar arguments made by Leesona in that litigation the Court made the finding quoted on pages 83 and 84 supra. If the commercial status of the apparatus or process is material to either test, it certainly

[23] *Sauquoit Exhibit* at 23-24.

is not in doubt. Both were in commercial use prior to the critical date.

k). The final question posed by Leesona is

> 11. Whether the dealings of the Permatwist partners with Archibald Graustein, Synthetic Yarns, and Synfoam Yarns constituted (a) an effort to sell the Stoddard and Seem false twist process or (b) an effort to obtain financial and experimental assistance to complete development of the inventions.

If the reader notes a distinct feeling of *deja vu*, he should not be alarmed. This is essentially a rehash of question number eight, which is in turn disposed of by questions five and seven. The one new aspect of this question seems to be the implication that a sale that amounts to an "effort to obtain financial and experimental assistance" negates the statutory "on sale" bar or brings the activity within the experimental use exception. To justify this necessary implication, Leesona cites a 1964 Court of Claims decision, Ushakoff v. United States, 327 F.2d 669, 164 Ct.Cl. 455 (1964), and a recent student article in the Stanford Law Review to the effect that:

> . . . If the inventor offered to sell the invention in order to gain a competitive advantage, it was probably complete; if, however, he was merely seeking funds to enable him to reduce the invention to practice, it probably was not complete.

Note, supra at 744.

At first glance this statement may appear to be a radical departure from the law governing the "on sale" bar, but a little reflection will indicate that it is nothing more than rephrasing of that comment in *Hobbs* quoted earlier in this opinion:

> The mere existence of a sales contract is insufficient to establish a placing "on sale". The invention that is the subject of the sale must be a reality in the sense

> that it must be beyond the stage of experimentation. . . .

451 F.2d at 859. If Leesona can just show that the apparatus and/or processes were in the experimental stage, there can be no "on sale" bar. But alas, Leesona can no more make that showing to qualify question 11 as a material fact in dispute than it could make the same showing for questions three, five, seven, eight or ten.

Conclusion

The pleadings and exhibits filed in this cause are quite voluminous. Nevertheless the Court has made a diligent effort to review the memoranda, depositions and exhibits in order to familiarize itself with the facts and the law. One should not infer that the omission of any particular argument from this opinion means that the argument was ignored or not considered. Rather it only means that not every point raised could be dealt with directly and still keep this opinion within manageable boundaries.

Accordingly, it is ordered and adjudged that United States Letters Patent 2,803,105, 2,803,108, and 2,803,109 shall be and they hereby are declared to be invalid because they were "on sale" and in "public use" more than one year prior to the date of the application for patent in the United States.

APPENDIX A

Aug. 20, 1957 N. J. STODDARD ET AL 2,803,108

METHODS OF PROCESSING TEXTILE YARNS

Filed Jan. 4, 1954 3 Sheets-Sheet 1

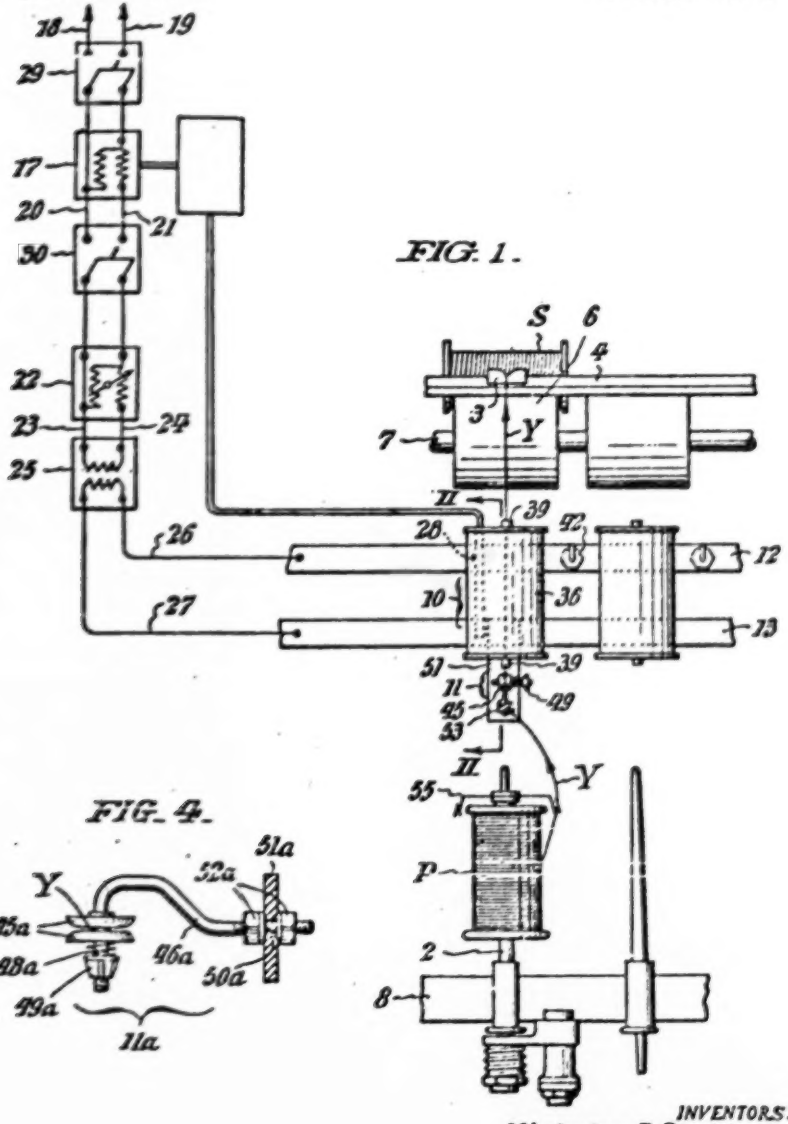

FIG. 1.

FIG. 4.

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Aug. 20, 1957 N. J. STODDARD ET AL 2,803,108

METHODS OF PROCESSING TEXTILE YARNS

Filed Jan. 4, 1954 3 Sheets-Sheet 2

FIG. 2.

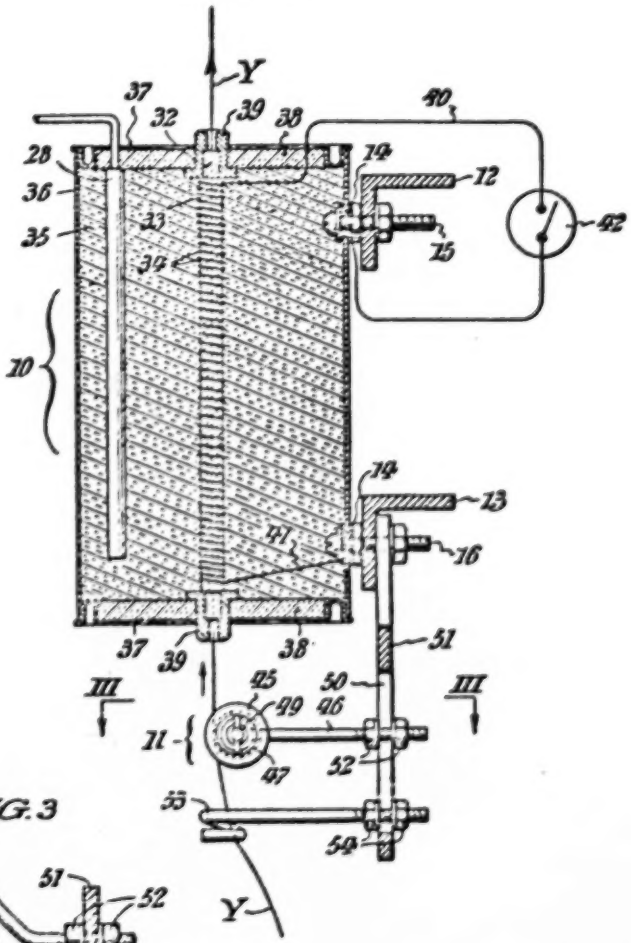
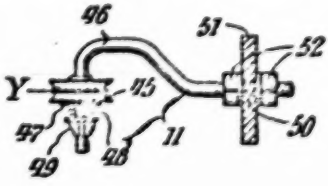


FIG. 3



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Cite as 309 F.Supp. 74 (1953)

Aug. 20, 1957 N. J. STODDARD ET AL 2,803,108

METHODS OF PROCESSING TEXTILE YARNS

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FIG. 5.

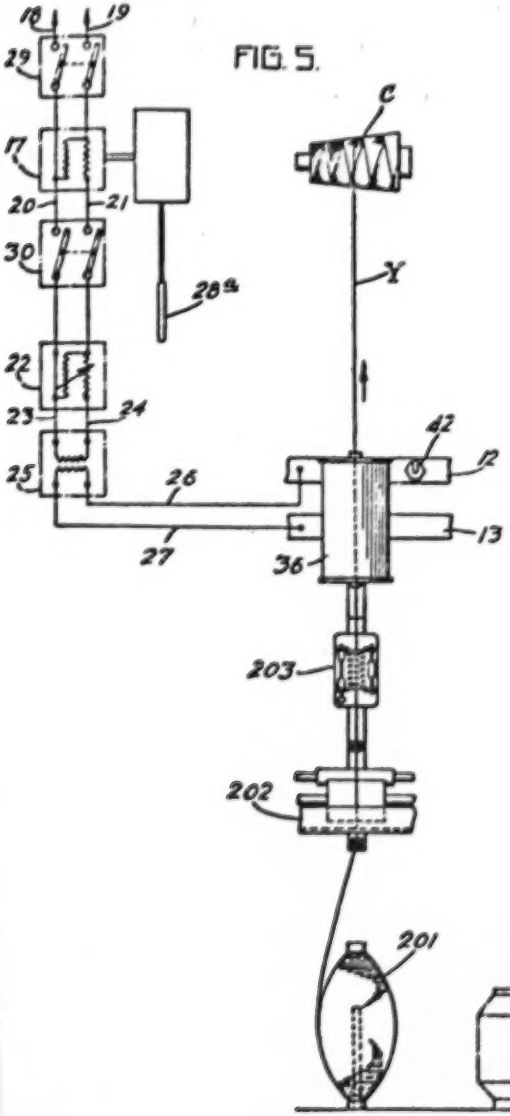
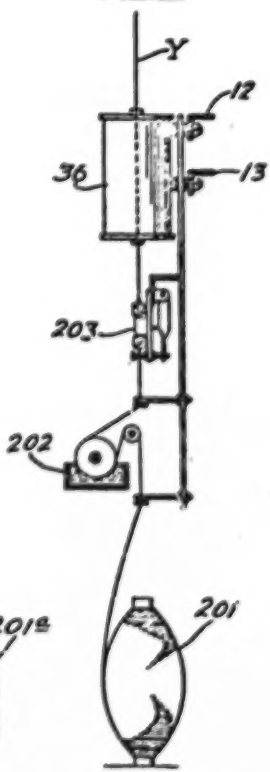


FIG. 6.



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United States Patent Office 2,803,108
Patented Aug. 20, 1957

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2,803,108

METHODS OF PROCESSING TEXTILE YARNS

Nicholas J. Stoddard, Berwyn, and Warren A. Seem, Chester Springs, Pa., assignors, by mesne assignments, to Universal Winding Company, Cranston, R. I., a corporation of Massachusetts

Application January 4, 1954, Serial No. 401,803

11 Claims. (Cl. 57—157)

This invention relates to thermoplastic textile yarns and methods of processing them. More particularly, it is concerned with polyamide and other thermoplastic yarns including nylon, Vinyon, Orlon, Velon, Dacron, Saran and the like (as distinguished from yarns of cotton, linen, rayon, silk, wool and the like), and to methods of thermally shrinking, thermally stretching, thermally processing and/or thermally stabilizing such synthetic yarns by thermal treatment with incidental winding, twisting, twisting and untwisting, plying, coning, copping, bubbing, drying, dyeing, coating, singeing, sizing, and other normal processing operations, with the aforesaid thermal operations uniformly carried out to substantially whatever degree desired or required and simultaneously with normal yarn processing operations.

In processing polyamides and other thermoplastic chemicals of the kind referred to after conversion into yarns to render them suitable for use in weaving, knitting and other textile operations, it has been the common practise to utilize heat in many forms such as steam, hot liquids and hot vapors to thermally shrink, thermally stretch, thermally stabilize and otherwise thermally treat the yarn, all such operations being carried out before, after or between normal operation or as separate and independent, thermal operations. For example, to set the twist or stabilize the torsional forces after twisting, pretwisted thermoplastic yarns wound upon rigid or sometimes collapsible cores were heretofore placed in a heated chamber. On the other hand, to shrink thermoplastic yarns, they were subjected to heat after having been wound into skeins, or upon collapsible cores, or loosely upon rigid cores, and again subjected a second time to heat after rewinding. To stretch completed thermoplastic ply yarns or cords it has been necessary heretofore to resort to a separate thermal stretching operation, and for impartation of dimensional stability, to subject the yarns to heat after winding upon a rigid core, and in some instances, to rewind and again heat treat the yarns.

It has also been the common practice in the past to wind thermoplastic yarns into skeins and to place the skeins into a closed heated treating chamber for shrinking and stabilizing the yarns. Here again, when the shrinkage desired was not consistent with the heat necessary for a relatively high amount necessary for thermal stabilization, and additional operations were therefore required in the processing.

When thermoplastic yarns were shrunk as heretofore by subjection to heat after being wound upon collapsible cores, or after being loosely wound upon rigid cores with a second heat treatment after re-winding, one to four extra operations were involved in the treatment. Because of the rigidity of the cores, and the varying resistance to collapsing of the previously wound yarn layers, uneven shrinkage or contraction of the yarns took place throughout the packages, and, as a consequence the treated yarns varied in physical characteristics, i. e., in appearance, denier, size, dyeing properties, elongation, elasticity, strength, residual shrinkage, torsion and the like, these variations and imperfections being carried through into the fabrics ultimately made from the yarn.

In the production of fish lines, nets and the like, for example, by prior art methods, the thermal stretching was done as a separate step after previous processing operations, but likewise without attainment of uniformity in the physical characteristics of the finished yarns.

In another prior art procedure for the purpose of attaining dimensional stability, thermoplastic yarns wound upon rigid cores were heat treated, and sometimes again rewound upon rigid cores and again heat treated. Notwithstanding these heat treatments, the processed yarns lacked uniformity in physical characteristics due to uneven shrinkage as between the inner and outer windings of the yarns on the cores and subjection of the outer windings to the heat for a longer time period than the inner windings during each heat treatment.

Definite irregularities (such as in appearance, denier, size, dyeing properties, yield value, contractile force, elongation, elasticity, residual shrinkage, torsion, strength, and the like) exist in packaged thermoplastic yarns as they come from the producer. These irregularities are due to many uncontrollable conditions during initial conversion of the thermoplastic chemicals into yarn strands, i. e., they are occasioned by variations of tension in the spinning, stretching and packaging operations, by lengthening and/or shortening of the yarns under changing conditions of temperature and humidity, and by variations in restraint upon the different layers of the yarns in the packages. Such imperfections cause, in fabrics and other products made from the yarns, corresponding irregularities which detracted from the appearance of the products, and frequently precluded use of the yarns in certain products of manufacture. In other cases the heretofore conventional yarn processing tended to accentuate the irregularities and/or cause more pronounced imperfections which further impair the quality of the products manufactured from the yarns, or additionally precluded their use in certain products.

Subjection of thermoplastic yarns to high temperature for prolonged periods of time causes considerable heat degradation. For shrinking and/or stabilization of thermoplastic yarn in packages as has been the common practice heretofore, the packages were exposed in a heated chamber for an hour or more depending upon the size of the packages, the density of the windings and the circulation of the air in the chamber. It has been determined that the loss in tenacity of nylon yarn subjected to a temperature of 284° F. for prolonged periods varies roughly as the logarithm of the time exposure, and when subjected to this temperature for an hour the yarn loses about 4% in tenacity, in two hours it loses about 8%, and in eight hours it loses about 24%. Accordingly, when nylon or other thermoplastic yarns are treated by the usual prior art methods they vary in tenacity and in other physical characteristics from the inside to the outside of the packages.

Thus, the processing of thermoplastic yarns by these prior art methods in preparation for weaving, knitting, or other uses entailed resort to numerous separate treating steps as well as frequent intermediate handlings of the yarns, all of which were painstaking, time consuming and expensive and so added very considerably to the cost of the yarns. Moreover, the results were generally unsatisfactory from the standpoint of uniformity due to the difficulty of maintaining the temperature, to which the yarns were subjected, constant for a uniform time during the various separate treatments.

The chief aim of our invention is to overcome the herein pointed out drawbacks in the prior methods of processing thermoplastic yarns in preparation for use in the manufacture of woven, knitted and other textile prod-

Cite as 264 F.Supp. 24 (1966)

sets, and to make possible the economic production of thermoplastic yarns which are uniform throughout as regards their physical characteristics. This objective is realized in practice, as hereinafter more fully disclosed, through provision of a simple and reliable method whereby improved uniformly processed thermoplastic yarns are produced in quantity in a rapid continuous manner at greatly reduced cost. Our method of processing provides the presence of heat and correlated yarn tension which we have discovered to be even more important for the best processing of thermoplastic yarn than the established practice of regulating relative humidity during the processing of other than thermoplastic yarns. This is broadly accomplished by introducing in the path of travel of the yarn during winding, twisting, twisting and untwisting, plying, coning, copping, bobbing, drying, dyeing, coning, singeing, sizing or the like, a thermally insulated regulatable restricted heated zone together with a regulatable yarn tension device; and then uniformly heating the traveling yarn under correlated tension.

Other objects and attendant advantages will appear from the following detailed description when considered in connection with the attached drawings, wherein:

Fig. 1 is a fragmentary view, in front elevation, of an exemplary apparatus suitable for processing thermoplastic yarns in accordance with our improved method.

Fig. 2 is a fragmentary view in vertical section, taken as indicated by the angled arrows II—II in Fig. 1 and drawn to a larger scale, showing one type of a specially designed heating device embodied in the apparatus.

Fig. 3 is a detail sectional view taken as indicated by the angled arrows III—III in Fig. 2, and showing one type of a specially designed device by which the yarns are maintained under tension during the processing.

Fig. 4 is a view like Fig. 3, showing another form of a specially designed tensioning device.

Fig. 5 is a fragmentary view in front elevation of a modified form of the apparatus which is suitable for dyeing and chemically sizing thermoplastic yarns; and

Fig. 6 is a side elevational view of the apparatus disclosed in Fig. 5.

It is to be pointed out that we do not limit our process to the two types of tension devices shown in Fig. 3 and Fig. 4 since it is obvious that many variations in design are possible without departing from the invention. The basic requirement for a tensioning device to be utilized in our process is that it be capable of applying the required yarn tension uniformly.

The apparatus illustrated in Fig. 1 is basically what is ordinarily known in the textile art as an "up-twister" such as is commonly used in twisting operations, one of the usual multiple spindles for a wound package P of unprocessed yarn being indicated at 2, the traverse rail for the corresponding distributing guide 3 being indicated at 4, a usual drive roll for the collecting spool S being indicated at 6, and the rotary shaft of said roll being indicated at 7. Spindle 2 is rotated by tangential contact of its diametrically enlarged lower portion 8 with a running belt 9.

In converting the apparatus for the purposes of our invention, we arrange in the interval between the spindle 2 and the traverse guide 3, a heating device 10, and a yarn tensioning means 11 along the line of upward travel of the thermoplastic yarn Y, i. e., upwardly from the supply package P to the collecting spool S. As presently explained, the device 10 is electrically heated, current being conducted to it through two fixed horizontal bus bars 12 and 13 whereto said device is secured, with interposition of insulation bushings at 14, by screws 15 and 16 as best shown in Fig. 2. The required degree of heat is uniformly maintained in the device 10 by current at a constant voltage (not exceeding twenty-four volts for personal safety) through an automatic induction voltage regulator 17 from a power line 18, 19, said regulator being connected by conductors 20, 21 to a manually adjustable induction voltage regulator 22 connected in turn by conductors 23, 24 to the primary of a step down transformer 25 in circuit through conductors 26, 27 with the bus bars 12, 13. The output voltage of the induction voltage regulator 17 is automatically governed by a thermally responsive sensing means 28 incorporated in the heating device 10. The automatic and the manual voltage regulators 17 and 22 and the thermostatic sensing means 28 may all be of any approved standard and commercially available types by cooperation of which the temperature in the heating device 10 is modulated compensatively with changes in ambient or room temperature and transfer of heat to the traveling yarn. Also included in the lines 18, 19 and 20, 21 respectively, are switch manually operable safety hand switches 29 and 30.

As shown in Fig. 2, the heating device 10 comprises a central tube 32, of non-ferrous material and of small diameter and bore, through which the yarn Y is passed, said tube being exteriorly coated as at 33 with glass or other electrical insulation, and surrounded by a coil 34 of resistance wire. As further shown, tube 32 is embedded in a thick walled jacket 35 of thermal insulation which may be of fiber glass Sil-O-Cel granules or the like encased in a metallic shell 36. At its opposite ends, the shell 36 is closed by covers 37 which also may be of metal, with interposition between them and the heat insulating jacket material 35, of disks 38 of transite or the like to minimize thermal transfer from the hot tube 32 to said shell and vice versa. Engaged over the opposite ends of tube 32 and passing through the disks 38 are hard wear-resistant bushings 39 which may be of porcelain or the like, to prevent cutting of the tube by the yarn passing through it. It is to be particularly noted that the winding pitch of the heating coil 34 increases progressively from the bottom end of the tube 32 at which the yarn enters, to the mid height of the tube, and that it progressively decreases toward the end at which the yarn emerges. As a result, a greater amount of electric energy is available at the entrant and at the exit ends of tube 32, thereby making possible the maintenance of the desired uniform elevated temperature throughout the tube and the use of a much shorter tube than otherwise would be required. The lead 40 from one end of coil 34 is extended through the cover 37 to the screws 15, and the lead 41 from the other end of said coil to the screw 16. Interposed in lead 40 is a hand switch which is diagrammatically indicated at 42.

We do not limit our process to the use of the one design of heating device shown as 10 in Fig. 2 since it is obvious that many variations in design are possible without departing from the invention. The heating device shown as 10 in Fig. 2 is very practical for our process since it is capable of supplying uniform (±1%) heat up to the melting point of the yarn without materially affecting room temperature.

The tensioning or restraining means 11 comprises, in this instance, a small V grooved wheel 45 about which one or more turns of the yarn Y are wrapped, said wheel being revolvable about the laterally bent end of a supporting shank member 46, and is engaged by a friction disk 47 which is backed by a compression spring 48, the force of the latter being finely regulatable by means of a thumb nut 49. As best shown in Figs. 2 and 3, the shank member 46 extends through a vertical slot 50 in a bracket bar 51 of metal suspended from bus bar 13, and is fixable after adjustment up or down and in and out by means of the clamp nuts indicated at 52. Arranged below the tensioning means 11 and similarly supported by the bracket bar 51 with capacity for both up and down and in and out adjustment is a pigtail guide 53 for the yarn Y, said guide being fixable in adjusted position by clamp nuts 54.

Again referring to Fig. 1, it will be noted that the thermoplastic yarn Y from the supply package 1 is threaded upwardly through one eye of the flyer 55 an-

sociated with spindle 2 then through the stationary guide 33, then one or more times around the wheel 45 of the tensioning means 11, then through the tube 32 of heating device 10, and finally through the traverse guide 3 en route to the collecting spool S.

In the operation of the apparatus to carry out our improved processing method, the yarn Y is drawn upward at a uniform linear speed from the supply package P on spindle 2 by the pull of the rotating take-up spool S, being maintained all the while under a predetermined constant tension by the tensioning device 11 in the interval between the latter and said take-up spool as it traverses the heating device 10. In the interval between the revolving supply package P and the wheel 45, the yarn is twisted by rotation of said package. As the yarn traverses the heating device 10 immediately after being twisted, it is softened or plasticized, and by cooling, after emergence from said device on its way to take-up spool S, it is thermally stabilized and the twist, previously inserted, is set. By this it is meant that the yarn is yarn-set, that is, the molecules in the thermoplastic yarn are permanently and uniformly reoriented or realigned therein according to the physical configuration of the yarn at the time of yarn setting so that the individual filaments of the yarn have an inherent tendency to retain or assume the physical configuration which they had at the time of yarn-setting. By adjusting the thumb nut 49 the resistance to free rotation of the wheel 45 can be varied to keep the tension at less than the contractile force of the yarn to shrink and stabilize the yarn to maintain the tension equal to the contractile force of the yarn when stabilization only is desired, or to increase the tension beyond the contractile force of the yarn to stretch and stabilize it.

During the processing, the temperature in the heating device 10 is maintained at a definite prescribed degree, depending upon the adjustment of the manual induction voltage regulator 22 and modulated compensatively with changes in ambient or room temperature and transfer of heat to the travelling yarn through influence of the thermostatic sensing means 28 in said heating device upon the automatic induction voltage regulator 17. By reason of the thick thermal insulation surrounding the coil 34 of the heating device 10, a very little thermal transfer actually can take place between the yarn tube 32 and the outside atmosphere. As a consequence, the required degree of yarn treating temperature is uniformly maintained in the restricted zone defined by the heating device. By adjusting the tensioning device 11, the tension to which the yarn is subjected can be accurately correlated with the effective treating temperature and the constant linear speed of travel of the yarn under the pull of the rotating take-up spool S. It is to be understood that the temperature will be adjusted in accordance with the requirements of the particular kind of thermoplastic yarn which is to be processed, and the tension adjusted to accordance with the characteristics desired in the finished yarn.

The effect of heat upon the different thermoplastic yarns now in commercial use is generally known and can be readily determined for new thermoplastic yarns. For each particular thermoplastic yarn various temperatures have a definite effect upon shrinkage, stabilization, tenacity, yield under stress, contractile force, elasticity, breaking elongation and other physical characteristics. By correlation of a uniform prescribed heat and imposition of very little tension, in accordance with our invention, maximum shrinkage will be permitted to take place uniformly throughout the length of the yarn. By applying tension just equal in degree to the contractile force of the yarn at the given temperature, neither shrinkage or stretching will take place, while by applying high tension, maximum stretching will take place throughout the length of the yarn. Thermoplastic yarn treated in accordance with our new method takes dyes evenly, and greater permanency and depth of color result from the uniform heating at

the elevated temperatures with increase in tenacity and in the modulus of elasticity of certain types of thermoplastic yarns.

In carrying out our improved processing method it is essential, as already been pointed out, that the speed of linear travel of the yarn through the restricted heating zone 10 must bear a definite relation to the extent of heat transfer to the running yarn. We have found it to be a simple matter to predetermine the extent of thermal transfer in the restricted heating zone to a particular yarn at any given temperature and any given speed of travel. For example, with a temperature of 485° F. maintained in the heating zone, 200 denier nylon yarn run through said zone at the rate of 600 inches per minute will shrink 8%. Since it is known that a dry temperature of 400° F. is required to shrink 200 denier nylon by the same amount, it is evident that the effective temperature in the heating device for that particular yarn and linear speed of travel must be 400° F. It is to be understood that by "effective temperature" we do not necessarily mean the temperature in the heating zone, but rather to the temperature required to obtain a given effect on the particular thermoplastic yarn involved if said yarn were not traveling but merely heated to that temperature. Thus, by our improved method, it is possible to predetermine thermal shrinking, thermal stretching, thermal processing and/or thermal stabilization to any desired extent within the limits of the characteristics of the particular yarns, with or without incidental twisting as may be desired by regulation of the yarn tension and the temperature of the restricted heated zone. With many types of thermoplastic yarns the presence of moisture adds substantially to the effectiveness of the heat at a given temperature in the processing. To those familiar with the art, it will be evident that it is a simple matter to adequately wet out the running yarn with water or other liquid solution of effective chemicals prior to passage of the yarn through the restricted heating zone.

In our improved method of processing, it is no longer necessary to accept as unavoidable and to make the best of many of the undesirable and thermal characteristics of processed thermoplastic yarns. Rather, our improved method makes it possible to economically process thermoplastic yarns with utilization of the maximum thermal qualities and improvement of their physical properties.

A few examples are given below of the procedures followed according to our invention in the processing of thermoplastic yarns for different purposes and uses.

To prepare nylon yarn for use in the welts of ladies stockings, the manual voltage regulator is adjusted to provide an effective temperature in the heating device 10 of 250° F. more or less depending upon the temperature used in subsequently preboarding of the hosiery in the usual way, adjusting the tensioning device, and running the yarn in the apparatus after the manner previously described, whereby the yarn is twisted, uniformly shrunk, stretched and/or stabilized to the degree desired. Thermoplastic yarn so processed will lend itself to be formed into uniform stitches by the needles of the knitting machines because it is set and molded to substantially smooth or rod shaped form. If, in the processing, the running nylon yarn is subjected to an effective temperature of 350° F. in the heating device, a tension of less than 0.4 gram per denier will cause the yarn to shrink while being twisted and thermally stabilized. Maintenance of a tension of more than 0.4 gram per denier, with other conditions remaining the same, will result in stretching of the yarn as it is twisted and stabilized, while under a tension of approximately 0.4 gram per denier, the yarn will simply be stabilized as it is twisted, without either shrinking or stretching. This continuous procedure is thus simple as compared with the prior art slow methods of thermoplastic hosiery welt yarn processing which involved the separate stages of redrawing the nylon yarn from the shipping bobbin or

fiber, untwisting the yarn; reeling the yarn into a skein; scouring the skein yarn while relaxed on a pole or wrapped in a bundle, backwinding the yarn, and finally coning the yarn.

To produce 30 turn 30 denier nylon leg yarn for ladies hosiery in accordance with our method, the twist setting or thermal stabilizing is accomplished simultaneously with uptwisting. In the usual prior art method of processing such yarn, the yarn was first twisted and spooled, and the spool placed for 90 minutes in a chamber wherein the atmosphere was heated to a dry bulb temperature of 170° F. and a wet bulb temperature of 160° F. to set the twist or thermally stabilize the yarn to prevent kinking or snarling in the knitting. Aside from being much more rapid, it will be seen that we have eliminated the double handling required by the prior art methods of preparing nylon leg yarn for ladies hosiery, the improved finished yarn being uniform in its physical characteristics and favoring the production of hosiery of improved attractive appearance, fit and length by reason of the uniformity of its stitches and residual shrinkage.

Another type of new and useful thermoplastic yarn can be produced in accordance with our invention by doubling and twisting two ends at low tension on a double-twister equipped with a heating unit constructed as hereinbefore described with an effective temperature of 400° F. maintained therein, one of the ends having had no previous thermal processing but the other end having previously been redrawn under tension through a similar heating unit installed in a conventional redraw machine also at 400° F. effective temperature. As a result of this processing, the end not previously thermally twisted, shrinks substantially and is wrapped by the other end which did not shrink, the finished yarn thus taking on a desirable cork screw appearance.

To produce a 100 denier 70 turn per inch nylon yarn having a sandy surface and substantially devoid of residual shrinkage, in accordance with our invention, we uptwist the yarn 70 turns per inch at 12,000 R. P. M. utilizing no flier and relying upon the ballooning, which takes place as the yarn is ravelled from the supply, to impart a low tension of approximately 7 grams. It will be seen that the sandy appearance of the yarn results as a consequence of this high twisting of the unheated yarn at the low tension. Yarn so twisted is then run in the apparatus of Fig. 1 with an effective temperature of 400° F. maintained in the restricted heating zone and thereby thermally shrunk, with attendant accentuation of the sandy appearance.

To produce 100 denier 70 turn per inch nylon varn having a smooth surface and a dull appearance with substantially no residual shrinkage, the procedure followed is the same as in the example immediately above except for the substitution in the apparatus of Fig. 1 of the modified tensioning means 11*a* shown in Fig. 4. In this modified tensioning means, instead of a grooved wheel, a pair of opposing friction disks 45*a* are mounted for free rotation upon the laterally bent end of the shank member 46*a*. The yarn is passed between the disks 45*a*, one of the latter being yieldingly pressed toward the other by a spring 48*b* which is finely regulatable by a thumb screw 49*a* threadedly engaged upon the distal end of the shank member 46*a*. For the instant purpose, the spring 48*a* is adjusted to apply a tension of 80 grams upon the yarn as the latter passes between the disks 46*a*, this degree of tension being greater than the contractile force of the yarn while it is heated to the elevated temperature and is being twisted. This twisting and stretching causes the heated yarn to assume the desired smooth appearance and to have substantially no residual shrinkage.

To produce a 140 denier plied Dacron yarn, having a minimum of residual shrinkage and elongation as well as uniformity of other physical characteristics, in which

two ends of 70 denier are each S twisted 24 turns per inch and Z twisted together 20 turns per inch, we first up-twist the respective ends in the apparatus of Fig. 1 with maintenance of an effective temperature of 350° F. in the heating device 10 and application of a tension of 70 grams to substantially stretch said ends and thermally stabilize their torsional forces. With this accomplished, we ply the two ends on a down spinner equipped with a similar heating device maintained at an effective temperature of 350° F. under a tension of 100 grams to further stretch and stabilize the torsional forces, and finally up-twist the yarn 20 turns Z in the apparatus of Fig. 1 at a temperature of 400° F. at a tension of 160 grams to still further stretch and thoroughly stabilize the yarn dimensionally and torsionally. While a generally similar yarn could be produced by utilizing certain procedures known in the prior art, a great many more separate steps and intermediate handlings would have to be resorted to, but such yarn would lack uniformity in physical characteristics for the reasons previously pointed out.

To prepare thermoplastic yarns, suitable for tricot knitting, in accordance with our invention, we first wind the yarn from the producer's delivery packages upon cones at an effective elevated temperature and under a tension consistent with optimum shrinkage and tenacity, by running them in a cone winder equipped with a heating device and a regulatable tensioning device like those described in connection with Fig. 1. In this example, only one normal operation is required. If the same requirements were to be met by prior art conventional methods, at least two additional costly operations would be involved namely, winding the yarn into a skein, and shrinking it while in the skein.

To produce uniformly dyed thermoplastic yarn, having maximum tenacity and a minimum of elongation on cones for use in circular knitting machines, the apparatus of Figs. 5 and 6 is utilized on which we cone wind the yarn from the producer's package 201 in one operation by first passing it through a trough 202 containing a dye solution before running it through the yarn tension 203 and the heating device 204 and then winding it onto the constant thread speed cone take-up *c*, with the effective temperature and the tension so correlated as to obtain maximum stretch without loss of tenacity. In this example, the yarn Y is dried and the dye developed by the action of the effective elevated temperature during traverse of the yarn through the restricted heating zone. Production of such dyed yarns heretofore, required two separate operations to wit: thermal stretching of the yarn, and drying the yarn and developing the dye. Aside from being more costly than yarns produced according to our new method, the processed prior art dyed thermoplastic yarns lacked the desired uniform physical characteristics.

To produce a chemically sized highly twisted uniform nylon yarn with torsional forces stabilized, in accordance with our new method, we run the yarn from a package 201*a* of highly twisted nylon yarn in a sizing machine as in Figs. 5 and 6 having a constant thread speed cone take-up *c* and heating and tensioning means like those in Figs. 5 and 6, utilizing an effective temperature of 250° F. for stabilization, and a tension of 30 grams. The prior art production of yarns of this type entailed a separate stabilizing operation, and the desired uniformity as to characteristics could not be obtained due to irregular shrinking.

To produce a yarn of maximum strength in which an end of thermoplastic yarn is doubled or plied with an end of cotton, in accordance with our invention, we thermally stretch the thermoplastic end to obtain the same elongation at the breaking point as the cotton end runs the two ends together in the apparatus of Fig. 1, the thermal stretching being thus accomplished simultaneously with the plying. Conventionally, several additional

operations would be required for attainment of corresponding results.

To produce substantially permanently set highly twisted thermoplastic yarn which is to be untwisted so as to become crimped, waved or fluffed, in accordance with our invention, we run the yarn continuously in a conventional up-twister equipped like the apparatus of Fig. 1 with a tensioning means and a heating device and subject the yarn to a high effective temperature and high tension whereby the thermal setting or stabilizing is accomplished simultaneously with the twisting.

To continuously produce permanently set highly twisted crimped, wavy or fluffed yarn in one continuous operation, according to our invention, we run the yarn in an up-twister equipped like the apparatus of Fig. 1 with a yarn tensioning means and a heating device, but with a special twisting and untwisting spindle such that the yarn is twisted while heated and then cooled, and the untwisting accomplished without interruption in the travel of the yarn. Such processing cannot be done, as far as we are aware, by any prior art method.

To process 70 denier nylon yarn, as received on a pirn from the manufacturer, for attainment of uniformity in appearance, denier size, dyeing properties, elongation, elasticity, residual shrinkage, etc., in accordance with our invention we unwind the yarn from the pirn instead of from a rotated package in the apparatus in Fig. 1, and run it through the apparatus in the same manner as previously described with maintenance of a uniform effective temperature of 385° F. and a uniform tension between 5 and 140 grams.

It is understood that the heating and tensioning devices herein shown are to be considered as exemplary of others which could be used providing that they are capable of maintaining the uniform temperatures and tensions necessary for attainment of the physical characteristics of our improved thermoplastic yarns.

From the foregoing it will be seen that we have provided a simple method by which various kinds of improved thermoplastic yarns for different purposes can be thermally processed more rapidly and at a much lower cost than heretofore, with assurance of uniformity in appearance and other desired physical characteristics.

The illustrated apparatus, per se, forms the subject matter of a separate patent application, Serial No. 401,952 concurrently filed herewith.

Having thus described our invention we claim:

1. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually passing the yarn at a selected linear speed under uniform tension through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to yarn-set the same, controlling the supply of heat energy to said zone to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension relative to the contractile force and thermal characteristics of the yarn resulting from heating the same.

2. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually passing the yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually

cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a selected uniform tension relative to the contractile force and thermal characteristics of the yarn resulting from heating thereof.

3. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually passing the yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension less than the contractile force of the yarn resulting from heating the same to shrink the yarn.

4. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually passing the yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension equal to the contractile force of the yarn to stabilize the same.

5. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually passing the yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension greater than the contractile force of the yarn to stretch and stabilize the same.

6. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually twisting the yarn, continually passing the yarn at a selected linear speed under uniform tension through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to reorient the molecules

Cite as 200 F. Supp. 74 (1953)

of the yarn to the twisted formation of the yarn and yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension relative to the contractile force and thermal characteristics of the yarn resulting from heating and twisting the same.

7. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually twisting the yarn, continually passing the twisted yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to reorient the molecules of the yarn to the twisted formation of the yarn and yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the twisted yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the twisted yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a selected uniform tension relative to the contractile force and thermal characteristics of the yarn resulting from heating and twisting the same.

8. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually twisting the yarn, continually passing the twisted yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to reorient the molecules of the yarn to the twisted formation of the yarn and yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the twisted yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the twisted yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension less than the contractile force of the yarn resulting from heating and twisting the same to shrink the same.

9. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually twisting the yarn, continually passing the twisted yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to reorient the molecules of the yarn to the twisted formation of the yarn and yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required

to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the twisted yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the twisted yarn at a uniform tension equal to the contractile force of the yarn to stabilize the same.

10. A method of thermally processing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually twisting the yarn, continually passing the twisted yarn at a selected linear speed through a restricted thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to reorient the molecules of the yarn to the twisted formation of the yarn and yarn-set the same, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the twisted yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, maintaining the twisted yarn under a uniform tension during heating, cooling and winding thereof, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the twisted yarn at a uniform tension greater than the contractile force of the yarn to stretch and stabilize the same.

11. A method of thermally processing and dyeing thermoplastic yarn which comprises continually drawing the yarn from a source of supply, continually applying a dye to the yarn travelling at a selected linear speed, continually passing the yarn at a selected linear speed under uniform tension through a thermally isolated and uniformly heated zone to uniformly heat the yarn to a prescribed temperature to dry and uniformly develope the dye-stuff and yarn-set the yarn, controlling the supply of heat energy to said zone compensatively according to the ambient temperature and rate of transfer of heat to the yarn to thereby maintain said heated zone uniformly at the temperature required to uniformly heat said yarn to said prescribed temperature, continually cooling the yarn to stabilize the same after passage under tension through said heated zone, winding the processed yarn, and correlating the tension in said yarn to said prescribed temperature and linear speed of travel of the yarn to maintain the yarn at a uniform tension relative to the contractile force and thermal characteristics of the yarn resulting from heating the same and relative to the chemical-physical properties of the dyestuff.

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APPENDIX B

THIS AGREEMENT made this 15th day of December, 1952, by and between

WARREN A. SEEM, of Gwynodd, Pennsylvania, NICKOLAS J. STODDARD, FRED TECCE and HAROLD P. BERGER, all of Philadelphia, Pennsylvania, (hereinafter called "Licensors"), parties of the first part, and SYNFOAM YARNS INC., a corporation organized and existing under the laws of the State of Delaware, (hereinafter called "Licensee"), party of the second part.

WITNESSETH:

1. (a) The Licensors represent that they have developed and are the sole owners (free from all encumbrances) of novel methods and means of processing nylon and other thermo-plastic yarns in such a manner as to impart a substantially permanent crimp or fluff thereto, which methods and means (including the improved spindle) are hereinafter referred to as the invention, and that the invention includes a spindle, an electric heating unit, a yarn tension device and auxiliary equipment required to convert conventional up-twisting machines to enable them to produce crepe or crimped or fluffed thermal-set yarns, which spindle, unit, device and equipment are herein collectively hereafter referred to as the improved spindle except as otherwise noted.

(b) The hereinabove methods and means were recently disclosed on May 20, 1952, in whole or in part, to Messrs C. R. Steedman, T. Leo Power, Wm. J. Hoag and Wm. A. Griffin, all representing the Licensee and a copy of the secret disclosure signed by all of them is attached hereto and becomes part of this agreement.

(c) References to the invention include both the invention as above set forth and all improvements therein made or acquired by the Licensors and also the improved spindle

as above defined, and all improvements therein made or acquired by the Licensors, all insofar as such improvements in the invention or in the improved spindle apply to the invention or the improved spindle referred to in paragraph 1(a) or paragraph 1(b) above or to the utilization of the improved spindle in the production of thermoplastic crepe yarns by adding twist to a previously highly twisted yarn, thermosetting and removing the same amount of twist as added; but such references do not include either (i) the inventions covered by U.S. Patents Nos. 2,353,666 and 2,411,132, both of which are owned by Crepe de Chine, Inc., a Pennsylvania corporation, or (ii) the use of the methods and means aforesaid for thermal shrinking, thermal stretching or thermal stabilizing of thermoplastic yarns other than incidentally to the production of crepe yarns as aforementioned or incidentally to imparting thereto a crimp or fluff as aforesaid. The Licensee agrees to refrain from any use, other than herein specifically licensed.

(d) To properly effect the intent hereof the Licensors agree that any improvements that they have made or may make in the future in the invention or in the improved spindle, all insofar as such improvements apply to the invention or the improved spindle referred to in paragraph 1(a) or paragraph 1(b) above or to the utilization of the improved spindle in the production of crepe yarns as aforesaid will be divulged to and made available, free of charge, to the Licensee.

2. The Licensors within three months from the date hereof will apply for a United States patent or patents in respect of the invention, and will prosecute such application or applications with all possible diligence. The Licensors agree that they will be sole owners free of encumbrances of the exclusive right to make, use and sell under (which right they will not exercise) and the exclusive license to grant to others the right to make, use and sell under said applications and under all patents which may issue therefrom so

far as they pertain to methods and means of producing crepe, crimped or fluffed thermalset yarns by twisting and untwisting. When serial numbers have been designated by the U.S. Patent Office to such patent applications the Licensors will promptly advise the Licensee of the serial numbers so designated.

3. The Licensors hereby license and authorize the Licensee, within the United States and its possessions, to the extent limited above, i.e., for the production of crepe, crimped or fluffed thermalset yarns, to use the invention at all times during the term of this agreement (including the right to make or have made for its own use as provided herein improved spindles and all parts thereof, the right to operate them and the right to make, use and sell any product processed thereon whether or not patent protection is obtained in respect of such product) and on the request of the Licensee will confirm this license and authorization after the issue of any patent or patents on the invention or any improvements as a license and authorization under such patent or patents. Without limitation of the foregoing Licensors agree at the request of the Licensee at any time and from time to time (a) to use their best efforts to procure for the Licensee as promptly as feasible such number of the improved spindles or parts therefor as the Licensee shall from time to time order, all at cost to the Licensors and without any profit to the Licensors or any charge for their services, the cost to the Licensee per improved spindle or part to be as low as the cost to anyone else with whom the Licensors deal at the time, and (b) at their own cost and expense to furnish the Licensee as and when requested by it with information, advice and assistance for the proper installation, maintenance, operation and use of the improved spindles and for the practice of the invention.

4. The Licensee hereby authorizes the Licensors to procure for the Licensee 1,000 of the improved spindles for

installation on frames now owned by D. W. Rich & Company, Incorporated, a New York corporation, hereinafter called "Rich". The Licensors will order such improved spindles for the Licensee for delivery as soon as practicable and as soon as any other improved spindles are delivered to anyone. The Licensors estimate but cannot guarantee that the cost of such improved spindles installed will not exceed $20 a spindle inclusive of the heating unit and all parts. The Licensors will not actually place any order without the approval of such order by the Licensee, but such approval shall not be unreasonably withheld. The Licensee will use its best efforts to complete the installation of such improved spindles as soon as reasonably practicable without undue expense.

5. The Licensors will at all times at the request of the Licensee, without charge and to the best of their ability, assist it in any marketing problems by giving it all data available to the Licensors in respect of the suitability of yarn processed on the improved spindles for various purposes and full details of the best methods of weaving, knitting and using the same for such purposes, and otherwise.

6. The Licensors will likewise use their best efforts to assist the Licensee to obtain a position with DuPont for a supply of nylon to the Licensee, but will not commit the Licensee in any way.

Received May 7, 1973

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA

No. 72-563-Civ-CA

SAUQUOIT FIBERS CO.

v.

LEESONA CORP., et al.

No. 72-641-Civ-CA*

KAYSER-ROTH CORP., et al.

v.

LEESONA CORP.

No. 72-691-Civ-CA

LEESONA CORP.

v.

DUPLAN CORP., et al.

FINAL JUDGMENT ON VALIDITY OF PATENTS 2,803,105, 2,803,108 AND 2,803,109

THE COURT has previously entered its Order Granting Motions for Partial Summary Judgment in the above-styled actions declaring United States Letters Patent 2,803,105, 2,803,108 and 2,803,109 to be invalid because they were "on sale" and "in public use" more than one year prior to the date of application. Having realized that the Order adjudicates more than one but fewer than all of the claims involved pursuant to Rule 54(b), F.R.Civ.P., it is therefore

DETERMINED that there is no just reason for delay in the entry of final judgment as to the validity of the above listed patents; and it is accordingly

---

* Master Case for Twenty-Four Consolidated Actions.

ORDERED AND ADJUDGED that a final judgment in each of the above-styled actions shall be and it hereby is entered declaring each of United States Letters Patent 2,803,105, 2,803,108 and 2,803,109 to be invalid.

ENTERED at Miami, Florida this 3rd day of May, 1973.

/s/ C. CLYDE ATKINS
C. Clyde Atkins
United States District Judge

SUPREME COURT, U. S.

NOV 18

MICHAEL RODAK, JR.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1974

No. 74-447

SAUQUOIT FIBERS COMPANY, INC., *Petitioner,*

v.

LEESONA CORPORATION, THE PERMATWIST COMPANY, WARREN A. SEEM, FREDERICK D. TECCE, NICHOLAS J. STODDARD AND HAROLD J. BERGER, *Respondents.*

BRIEF IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1974

No. 74-447

SAUQUOIT FIBERS COMPANY, INC., *Petitioner,*

v.

LEESONA CORPORATION, THE PERMATWIST COMPANY, WARREN A. SEEM, FREDERICK D. TECCE, NICHOLAS J. STODDARD AND HAROLD J. BERGER, *Respondents.*

BRIEF IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

The Duplan Corporation et al and Kayser-Roth Corporation et al, appellees in the Court below and respondents in this Court, support the petition filed by Sauquoit Fibers Company, Inc., No. 74-447, and submit that a writ of certiorari should issue to review the judgment of the United States Court of Appeals for the Fifth Circuit entered in the above-entitled case on July 29, 1974.

CITATIONS TO OPINION BELOW

The opinion of the Court of Appeals is printed in the petitioner's appendix (App. A-1) and is reported at 498 F.2d 271 (5th Cir. 1974). The opinion of the District Court is printed in the petitioner's appendix (App. A-31) and is reported at 360 F.Supp. 74 (S.D. Fla. 1973).

JURISDICTION

The judgment of the Court of Appeals as to which review is sought was entered on July 29, 1974 (petitioner's App. A-30). The petitioner properly invoked the jurisdiction of this Court under 28 U.S.C. § 1254(1).

QUESTIONS PRESENTED

The petition presents important Federal questions which require resolution by this Court. The questions framed by the petitioner include the following subsidiary questions:

1. Whether the judicially-created "experimental exception" in favor of a patentee, the effect of which is to avoid the invalidating consequences of 35 U.S.C. § 102(b), can be given a broader construction than the judicially-created experimental exception in favor of the public, the effect of which is to excuse only those patent infringments which are non-commercial and purely experimental, without violating the Constitutional and statutory plan of the Patent Laws.

2. Whether an inventor's experimental motive can nullify the one year limitation imposed by 35 U.S.C. § 102(b), and thereby postpone the expiration of the patent monopoly, where his experimentation includes any sale of the same invention for profit.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

A. United States Constitution, Article 1, Section 8:

> "The Congress shall have Power . . . To promote the Progress of Science useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discovery."

B. 35 U.S.C. § 102(b):

> "Conditions for patentability; novelty and loss of right to patent.
>
> (a) A person shall be entitled to a patent unless—
>
> * * * *
>
> the invention was . . . in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or . . ."

STATEMENT OF THE CASE

It is fundamental that the Constitutional objectives of the United States patent system is to promote the progress of science and the useful arts by encouraging inventors to make prompt disclosure of their inventions in consideration for the granting of exclusive rights thereto for a limited time. *Kewanee Oil Co.* v. *Bicron Corp.*, — U.S. —, 40 L.Ed.2d. 315 (1974).

This Court has repeatedly declared that the primary purpose of a patent is not the creation of private fortunes for its owners; the interests of the public are always dominant. *Pennock* v. *Dialogue*, 2 Pet. 1, 7 L.Ed. 327 (1829); *Kendall* v. *Winsor*, 21 How. 322, 16 L.Ed. 165 (1859).

In implementing this Constitutional objective, the Congress has provided thaht an inventor, otherwise fully entitled to a patent, shall *not* receive a patent if,

> "The invention was patented or described in a printed publication in this or a foreign country or *in public use or on sale in this country,* more than one year prior to the date of application in the United States . . ." (35 U.S.C. § 102(b))

In *Woodbridge* v. *United States,* 263 U.S. 50 (1923), this Court explained the Constitutional purpose that is served by the statutory limit on pre-application exploitation by the inventor, at pages 55-56:

> ". . . Congress relies, for the public benefit to be derived from the invention during the monopoly, on the natural motive for gain in the patentee to exploit his invention and to make, use and vend it or its product, or to permit others to do so, for profit. The importance in . . . keeping the inventor's monopoly within the term for which the patent is granted is thus shown to be capital. Any practice by the inventor and applicant for a patent through which he deliberately and without excuse postpones beyond the date of the actual invention, the beginning of the term of his monopoly and thus puts off the free public enjoyment of the useful invention, is an evasion of the statute and defeats its benevolent aim."

The decision of the Court of Appeals below seriously undermines, and is in conflict with the Constitutional and Congressional objectives heretofore declared by this Court, by holding that the judicially-created "experimental use" exception is available to excuse the placing on sale of an invention more than one year prior to the filing of a patent application, even though the sale had a commercial purpose, and was made for the inventor's profit.

The present petition arises from a consolidated patent-antitrust litigation pending in the United States District Court, Southern District of Florida, for coordinated pretrial proceedings pursuant to 28 U.S.C. § 1407, to which each of the respondents herein is a party. Each of the respondents herein was sued by the respondent Leesona Corporation, owner of three U.S. patents, Nos. 2,803,105, 2,803,108 and 2,803,109. Each of the respondents herein also instituted suit against the respondent Leesona in the U.S. District Court for the Eastern District of New York and sought, *inter alia,* a declaratory judgment that each of the aforesaid patents are invalid and misused, and that Leesona had violated the antitrust laws. At the time these suits commenced, all of the respondents were using synthetic yarn texturing machinery purchased from various foreign and domestic manufacturers, all of whom, pursuant to agreements, sold such machinery subject to a royalty bearing license from Leesona.[1] In each of the suits brought by the respondents herein, the jurisdiction of the District Court was invoked under 28 U.S.C. Sections 1331, 1332, 1337, 1338, 2201 and 2202.

All of those cases were consolidated by the District Court in the Eastern District of New York for discovery proceedings under the supervision of that Court until March 22, 1972, when those cases, along with cases from the Third, Fourth and Fifth Circuits involving the same issues and additional segments of the texturing industry were transferred to the United States

[1] These Agreements, based upon the patents in question, involved rebates from Leesona to its competitor-manufacturers, and have been held by the District Court to violate Section 1 of the Sherman Act, — F.Supp. — (S.D. Fla. 1974), Appeal filed May 30, 1974.

District Court for the Southern District of Florida by the Judicial Panel on Multi-district Litigation (MDL Docket No. 82).[2] After the transfer to Florida, the respondents herein moved the Court for a summary judgment declaring the invalidity of the aforementioned patents because of the violation of 35 U.S.C. § 102(b).

Decision Of The District Court

On April 24, 1973, the District Court for the Southern District of Florida entered summary judgment that United States patent 2,803,105, 2,803,108 and 2,803,109 are invalid under 35 U.S.C. § 102(b). The decision was based, *inter alia*, upon the following undisputed and admitted facts:[3]

> 1. Prior to December 15, 1952,[4] the invention claimed by the patents had been embodied into working machines which performed satisfactorily for their intended purpose.
>
> 2. By an agreement dated December 15, 1952, the patentees contracted to procure several such machines for a third party, Synfoam Yarn, Inc., and granted it an exclusive license to make, use and sell the invention, in return for half of the profit of the licensee.

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[2] *In re Yarn Processing Patent Validity Litigation*, 341 F.Supp. 376 (J.P.M.L. 1972), (Judges Weinfeld, Wisdom and Weigel, dissenting).

[3] The "Material Facts" cited by the District Court (A-44) are not set out in the opinion of either Court below. They are reprinted herein at K-1 to K-5 of the Appendix.

[4] Patent applications on the invention were filed on January 4, 1954; therefore, the critical date for purposes of 35 U.S.C. § 102(b) is January 4, 1953.

Upon these undisputed facts, the District Court correctly held that the petitioners were entitled to judgment as a matter of law, and under Rule 56(e), the evidence offered by respondent (alleged to show some continuing "experiments") was not sufficient to raise any material fact issue for trial. Summary judgment was thus entered pursuant to Rule 56(c), and it then appeared that this protracted multi-district litigation might be nearing its end.

Decision Of The Court Of Appeals

However, the Fifth Circuit reversed. Without in any way controverting the undisputed and admitted facts showing a *prima facie* violation of the statute, the Court held:

> 1. That the judicially-created "experimental use exception" is of a scope which excuses a sale of the invention later patented, and thus postpones filing for the application contrary to Section 102(b), even though the invention is already complete and has performed satisfactorily for its intended purpose.
>
> 2. That the "experimental exception" can excuse a sale of the invention by the patentee even where the sale is not *merely* for purposes of experiment, but also includes a substantial profit or commercial motive.[5]

---

[5] But see the recent decision of the Seventh Circuit in *Dart Industries, Inc.* v. *E.I. DuPont de Nemours & Co.*, 489 F.2d 1359 (7th Cir. 1973) which questioned whether a *sale* could ever be for experimental purposes and held that "the exception is narrowly construed, and the use must be *solely* for experimental purposes." This rationale, unlike that of the Court below, is entirely *consistent* with the prior decisions of this Court. See *Egbert* v. *Lippmann*, 104 U.S. 333, 336 (1881); *International Tooth Crown Co.* v. *Gaylord*, 140 U.S. 55, 63 (1891).

3. That the "experimental use exception" is available to excuse a sale for profit even where the sales contract makes *no* reference to experimentation or any similar term, and recites instead that it "contains the entire agreement of the parties . . . and merges within itself, all prior negotiations, understandings and agreements of any nature whatsoever."

ADDITIONAL REASONS FOR GRANTING THE WRIT

The writ should be granted for the reasons cited by the petitioner. The decision of the Court below creates irreconcilable conflicts with prior decisions of this Court and other Courts of Appeal in delineating the permissible scope of the patentee's "experimental exception", and is of great importance, not only because of the large number of patent cases in which this issue arises,[6] but also because of the broad impact which this issue has on the multi-district litigation, MDL No. 82, which includes most of the entire United States' synthetic textile processing industry.

In addition to those reasons cited by the petitioner, the petition should also be granted:

1. To Resolve the Conflict in Scope Between the "Experimental Exception" Allowed to the Patentee, and the "Experimental Exception" Allowed to the Public; the Latter Exception Has Always Been Interpreted To Apply Only to Activities Which Are Merely Experimental—and Which Involve No Commercial Motive or Profit.

The decision of the Court below, holding that the exception may be applicable even where there is a sale

[6] The volume of reported cases strongly suggests that this § 102(b) defense trails only the "obviousness" defense of § 103 as the most frequently litigated issue in patent cases.

for profit, is also clearly in conflict with the more narrow limits on the experimental exception that is applied in favor of a member of the public who is alleged to infringe a patent. Like the experimental exception to § 102(b), the experimental exception in favor of the alleged infringer is a judicially-created gloss, to the effect that:

> "An experiment with a patented article for the *sole* purpose of gratifying a philosophical taste, or curiosity, or mere amusement, is not an infringement."
>
> (*Poppenhusen* v. *Falke et al*, 19 Fed.Cas. 1048, No. 11,279 (C.C.S.D.N.Y. 1861))

As in the case of the experimental use exception in favor of the patentee, the experimental use exception in favor of the public first appeared in decisions arising under the earliest patent statutes. See *Whittemore* v. *Cutter,* 29 Fed.Cas. 1120, No. 17,600 (C.C.D. Mass. 1813) (Story, J.). The exception in favor of the public, however, has been consistently and uniformly restricted to situations where the alleged infringing use was *solely experimental,* or was for trifling personal purposes, such as to satisfy a scientific curiosity or private amusement—but that doctrine has never been so extended to excuse any use or sale for profit, or even uses for the purpose of determining whether the invention might be marketable. *Radio Corp. of America* v. *Andrea,* 15 F.Supp 685, 687 (E.D.N.Y. 1936), mod. on other grounds 90 F.2d 612 (2nd Cir. 1937); *Akro Agate Co.* v. *Master Marble Co.,* 18 F.Supp 305 (N.D.W. Va. 1937).

In *Cimiotti Unhairing Co.* v. *Derboklow,* 87 Fed. 997 (C.C.E.D.N.Y. 1898), the Court found that the

defendant's uses were not within the narrow confines of the experimental use exception, stating at page 999:

> ". . . It is sought to excuse this use of infringing devices on the theory that defendant was 'experimenting' with the machines in order to see if he could not discover some improvement. But his experiments consisted in running pelts through the machines. Apparently he had no pelts of his own, and has used those of his customers, which he was given to dehair, in the ordinary course of business. This is not fairly within any legitimate use for experimental purposes only. Poppenhusen v. Falke (1861) 2 Fish. Pat.Cas. 181, Fed.Case.No. 11,279; Albright v. Trimming Co., 2 Ban. & A. 629, Fed.Case.No. 147."

The experimental use exception should not be construed broadly in favor of the patent holder, so as to permit uses or sales for profit to prolong the term of his monopoly, while at the same time the exception is construed narrowly when it is claimed on behalf of the public. If the only legitimate "experimental use" that may be made by the public is one which is *only* for purposes of experimentation, and without *any* taint of profit, then the exception should properly be interpreted with equal strictness when it is claimed on behalf of patentees. As this Court said in *Deep South Packing Co.* v. *Laitram Corp.*, 406 U.S. 518, 531 (1972):

> "We would require a clear signal from Congress before approving the position of a litigant who, as respondent here, argues that the beachhead of privilege is wider, and the area of public use narrower, than the Courts had previously thought."

The decision of the Court below does improperly widen that beachhead by sanctioning the use of the ex-

perimental exception to excuse a sale for profit. This Court has *never* approved such a flagrant evasion of the statute.[7] The decision of the Court below is thus in conflict, not only with the prior decisions of this Court narrowly interpreting the availability of the experimental exception to patentees, but also with the numerous decisions which have similarly limited the experimental exception when it has been claimed on behalf of the public.

Such an interpretation—putting the patentee's interests ahead of that of the public—also involves a conflict in principle with the numerous declarations of this Court respecting the relative importance of the conflicting interests which are reconciled by the patent system.

In *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U.S. 502, 61 L.Ed. 871 (1917), this Court re-examined those conflicting interests in light of the Constitutional purpose and held, at pages 510-511:

> "Since Pennock v. Dialogue, 2 Pet. 1, 7 L.Ed. 327, was decided in 1829, this Court has consistently held that the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents, but is 'to promote the progress of science and the useful arts' (Constitution, art. 1, § 8),—an object and purpose authoritatively

[7] The Court below appears to have mistakenly believed that this Court's decision in *City of Elizabeth* v. *Pavement Co.*, extended the exception to include uses or sales for profit. But the *Elizabeth* case did not involve any profit or other attempt by the patentee to commercialize—and thus no question of an extension of the monopoly period—as this Court later pointed out in *International Tooth Crown Co.* v. *Gaylord*, *supra*, at p. 63. By this misreading of *Elizabeth* the Courts of Appeal have *extended*—contrary to legislative mandate (*infra* p. 14)—the exception in favor of the patentee to embrace the very type of sales for profit that the statute was intended to *prohibit!*

expressed by Mr. Justice Story, in that decision, saying:

> 'While one great object [of our patent laws] was, by holding out a reasonable reward to inventors and giving them an exclusive right to their inventions for a limited period, to stimulate the efforts of genius, the main object was "to promote the progress of science and useful arts" '.

Thirty years later this court, returning to the subject, in Kendall v. Winsor, 21 How. 322, 16 L.Ed. 165, again pointedly and significantly says:

> 'It is undeniably true, that the limited and temporary monopoly granted to inventors was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly.'

This Court has *never modified* this statement of the relative importance of the public and private interests involved in every grant of a patent . . ." (emphasis supplied)

In *Sinclair & Carroll Co.* v. *Interchemical Corp.*, 325 U.S. 327, 89 L.Ed. 1644 (1945), this Court, speaking through Mr. Justice Jackson, reiterated the point, stating at pages 330-331:

> "The primary purpose of our patent system is not reward of the individual but the advancement of the arts and sciences.[8] Its inducement is directed

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[8] The footnote *by the Court* cited the testimony of Commissioner of Patents Conway Coe before the T.N.E.C. on January 16, 1939 at which time he advanced the legislative proposals which, *inter alia*, resulted in the *reduction* of the statutory period from two years to the one year now contained in 35 U.S.C. § 102(b). See also pages 15 to 17, *infra*.

> to disclosure of advances in knowledge which will be beneficial to society; it is not a certificate of merit, but an incentive to disclosure."

Accord, *Great A & P Tea Co.* v. *Supermarket Equipment Co.*, 340 U.S. 147, 95 L.Ed. 162 (1950) (Concurring opinion of Mr. Justice Douglas).

It is utterly inconsistent with these repeated declarations as to the guiding principles of the patent law that the privileges of the patentee can be elevated to greater importance than the correlative rights of the public—especially where the effect of this expansion of privilege does violence to the major object of the patent law: that of promoting prompt disclosure of the invention so that the public can, as early as possible, obtain the free right to make, use and vend the thing invented. As Mr. Justice Story stated in *Pennock* v. *Dialogue*, *supra*, at page 19:

> ". . . the main object [of the patent act] was 'to promote the progress of science and useful arts'; and this could be done best by giving the public at large a right to make, construct, use, and vend the thing invented, at as early a period as possible . . ."

Nowhere in its opinion does the Court below recognize, or pay heed to the important public interests or the Constitutional objectives embodied in the mandate of § 102(b). The decision of the Court below should be reviewed and corrected, so that the patentee's "experimental exception, which, as exemplified by the decision below, has been expanded to the point where it threatens to swallow the rule, can be restored to its true perspective, *Egbert* v. *Lippmann*, *supra*. In order to comport with the Constitutional objective and serve any legitimate purpose, the "experimental exception"

in favor of patentees must be limited, like that exception which runs in favor of the public, so that it excuses only those acts which are *only* experimental—and without taint of profit.

2. To Resolve the Conflict Between the Decision Below and the Congressional Mandate, Embodied in 35 U.S.C. § 102(b), that the Patentee's Pre-application Exploitation Be Strictly Limited.

The effect of the decision below is to prolong the period between the completion of the patentee's invention and the time within which he must file his patent application.

Congress, however, acting within its Constitutional authority, has fixed that time in the patent statute. As Mr. Justice Story approvingly said in *Pennock* v. *Dialogue, supra,* at page 19, it is "wise . . . legislation" which:

> "should withhold from an inventor the privilege of an exclusive right, unless he should, *as early as he should allow the public use,* put the public in possession of his secret and *commence the running of the period that should limit that right . . .*" (emphasis supplied)

At all times during which this Court's own decisions in respect to the "public use" and "on sale" restrictions were made, the period was set by Congress at two years.[9] In 1939, 100 years after the two-year period was first set by Congress, the statute was amended, and the patentee's period of grace was *reduced* to one year. Although the Court below took

[9] Despite the large volume of cases involving the public use and on sale defenses, this Court has not addressed itself to those issues, or attempted to clarify the misconceptions as to the experimental exception that have proliferated in the various circuits, since prior to the amendment of the statute in 1939.

no heed to the significance of that reduction, it is abundantly clear that by such reduction, Congress intended to cut down the delay between the act of invention and the beginning of the statutory monopoly, by forcing inventors to the Patent Office at as early a date as possible.

Appearing and testifying before the Temporary National Economic Committee in January 1939, Commissioner of Patents Conway Coe advanced the recommendations which led to that time reduction, stating at page 857:

> "Mr. Coe. It is not the principal purpose of the patent law of our own country or of any nation to reward an individual gain. It is the promotion of science and the advancement of the arts looking to the general welfare of the Nation that the patent laws hope to accomplish. The individual reward is only the lure to bring about this much broader objective. Every patent granted benefits society by adding to the sum total of human knowledge, but that is not enough, and that alone will not achieve the ultimate goal of the patent system." [10]
>
> (T.N.E.C. Hearings, Seventy-sixth Congress, Part 3, page 857)

Commissioner Coe made his specific proposals to the Committee, stating at page 862:

> "Under the present law an inventor may make public use of his invention for two years before filing his application. *As a further step in accomplishing an earlier filing of the application looking to an earlier issuance of the patent,* I propose that this public use period be reduced from two years to one." (emphasis supplied)

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[10] This testimony of Commissioner Coe was previously relied upon by this Court in *Sinclair & Carroll* v. *Interchemical Corp.*, 325 U.S. 327 (1945). See page 12, *supra.*

Later that same year, that proposal, by then part of a bill entitled "Reducing the Statutory Times For Public Use and Publication Before Filing Application for Patent From Two Years to One Year," was favorably reported to both the House and Senate (Report No. 961 and No. 876, respectively), and enacted August 5, 1939. Both the House and Senate reports explained the purpose of the reduction, as follows:

> "In 1839, when the period of 2 years was first adopted, it may have been a proper length of time for an inventor to make up his mind whether or not to file an application for patent. Under present conditions 2 years appears unduly long and operates as a handicap to industry. Reduction of the period would *serve to bring the date of patenting closer to the time when the invention is made,* and would expedite applications, not only in their filing but also in their progress through the Patent Office.
>
> *One year* is believed to be a *very fair* period to all concerned.
>
> The bill has the approval of the Commissioner of Patents, and is in substance one of the recommendations made by him when he was called upon by the Temporary National Economic Committee for suggestions to improve the patent laws. It also has the approval of the Department of Commerce and the Patent Office Advisory Committee to the Secretary of Commerce. Various patent-law organizations have endorsed it and it has likewise been approved by the National Advisory Council to the House Committee on Patents. This council has a membership of 24, selected from inventors, scientists, engineers, industrialists, economists, labor people, lawyers (both general and patent-law specialists), judges, and others, to give a representative cross section of the country."

The one-year limitation was carried into 35 U.S.C. § 102(b) by the Patent Codification Act of 1952, 66 Stat. 797.

These excerpts make the purpose of Congress in reducing the inventor's period of grace abundantly clear. The reasons which existed during the 19th Century, and were thought to justify a longer period, became obsolete. The interminable delays between the making of inventions and their disclosure to the Patent Office, which 50 or 75 years earlier could be accommodated by the relatively slow pace of industrial progress, now proved to be a "handicap to industry". Cf. *Graham* v. *John Deere Co.*, 383 U.S. 1, 6-9, 19 (1965). The acceleration of technology, and the increasing demands for more rapid advances which accompanied it, not only brought the objective within legislative reach, but made it a necessary goal: To bring the date of patenting as close as possible to the "time when the invention is made".

Nothing in the decision of the Court below either recognizes or furthers that legislative objective. To the contrary, the decision of the Court below appears to treat the "time when the invention is made" (for purposes of establishing the patentee's priority) and the date of the beginning of the legal monopoly as though they were independent concepts—and without a Constitutional and legislative connective.[11]

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[11] According to this construction by the Court below, an inventor could "make" his invention, thereby cutting off the rights of subsequent inventors to freely use or dedicate the same invention, but then continue to experiment (toward a "reduction to practice") indefinitely *while commercially exploiting* the invention *and* delaying the filing of his application. Obviously, such a result is repugnant to the whole purpose of the Patent Laws.

It is clear, however, from the declarations of Constitutional purpose by this Court and the legislative declarations of Congress that the filing of the patentee's application *does have* a definite time relationship to the completing of his invention. Moreover, by Congressional fiat, after he has begun to exploit his invention, the patentee may not delay more than one year, *regardless* of his purpose. The Court below appears to have supposed, to the contrary, that the one-year period should be *in addition* to whatever period of "experimental refinement" the patentee should choose to enjoy: a "supplement" to the 17-year term of monopoly decreed by Congress. Nothing in the decisions of this Court, or in the legislative history, support such a supposition. Indeed, the decisions of this Court consistently support the opposite conclusion: that, after the invention is completed, the patentee has one year within which to carry on his experimentation. The one year is thus for *the purpose* of permitting the patentee to experiment and refine, but he is limited to that. If he chooses to use or sell the invention, he may not tack on an extra year of exploitation—in addition to the statutory limit of 17 years, merely by continuing to refine and experiment. In *Woodbridge* v. *United States*, 263 U.S. 50 (1923), this Court emphasized that:

> "... *Any practice* by the inventor and applicant for a patent through which he deliberately and without excuse postpones beyond the date of the actual invention, the beginning of the term of his monopoly, and thus puts off the free public enjoyment of the useful invention, *is an evasion of the statute and defeats its benevolent aim.*" (emphasis supplied) (at p. 56)

CONCLUSION

The decision of the Court below does defeat the benevolent aim of the statute, and runs contrary to the Constitutional limitation that patents shall be granted only ". . . for limited times" set by the Congress.

The law in the Courts of Appeal is in confusion and conflict: The "experimental exception" to patentee is clearly an "evasion" of the statute, and under the decision of the Court below, the exception threatens to nullify the entire statutory purpose.

The multi-district nature of the litigation in which this question arises, with cases to be returned to the Second, Third and Fourth Circuits, portends a further proliferation of this confusion.

The writ of certiorari should be granted, so that the proper Constitutional and statutory role of the experimental exception can be clarified, and returned to its true and narrow place within the patent system.

Respectfully submitted,

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APPENDIX

APPENDIX

Undisputed Material Facts Showing the Violation of 35 U.S.C. § 102(b)

The undisputed material facts referred to and adopted by the District Court in its opinion (Petitioner's appendix at A-44), are as follows:

1. Each of the Stoddard patents in suit, Nos. 2,803,105, 2,803,108, and 2,803,109 was granted upon an application first filed in the United States Patent Office on January 4, 1954. The "critical date" for purposes of the "public use or on sale" provisions of 35 U.S.C. Sec. 102(b) is thus January 4, 1953 as to each such patent.

2. Prior to January 4, 1953, and prior to May 20, 1952, the patentees, Nicholas J. Stoddard and Warren A. Seem, assisted by one or more associates, installed in the basement of the plant of Marionette Mills, Coatesville, Pennsylvania, apparatus constructed substantially in accordance with Figs. 2 and 8-13 of the '105 patent; Figs. 5 and 7 of the '108 patent; and Figs. 1-7 of the '109 patent. This apparatus consisted of a single full sized false-twisting machine with 220 spindle positions (hereinafter simply the "220 spindle machine").

3. The 220 spindle machine was essentially a textile "uptwister" machine that was converted to false twisting operation by the modification generally described in patent 2,803,105, beginning at Column 2, line 4. In particular, each spindle position of the 220 spindle machine was fitted with a false twist spindle, an electrically energized thermal unit, a tension device, a creel, and auxiliary equipment to enable yarns to be held and processed according to the false twist method defined in the patents in suit.

4. On May 20, 1952, Stoddard and Seem demonstrated the 220 spindle machine and its method of operation to Thomas L. Power William J. Hoeg, William A. Griffin and C. R. Steedman, all representing Synthetic Yarns, Inc.

and/or Synfoam Yarns, Inc., both corporations which were located at Lowell, Massachusetts.

5. At the demonstration of May 20, 1952, nylon yarn was threaded through the 220 spindle false twisting machine substantially as shown in the drawings of the '109 patent. The machine was operated in its intended manner and performed satisfactorily. The nylon yarn was thus processed into a stretch yarn having an acceptable, permanent crimp.

6. The construction and use of the 220 spindle machine would, during the term of the patents in suit, constitute an infringement of each of the '105, '108 and '109 patents.

7. On December 15, 1952, the patentees and their associates, Mr. Fred Teece and Mr. Harold Berger, entered into an agreement with Synfoam Yarns, Inc. which was referred to throughout the agreement as the "licensee". The agreement recited that "the invention" (also identified as "novel means and methods of processing nylon and other thermoplastic yarns in such a manner as to impart a substantially permanent crimp thereto") had been disclosed to the four representatives of Synfoam on May 20, 1952, and provided, in paragraph 3:

> "3. *The Licensors hereby license and authorize the Licensee*, within the United States and its possessions, to the extent limited above, i.e., for the production of crepe, crimped or fluffed thermalset yarns, to use the invention at all times during the term of this agreement (including the right *to make or to have made for its own use* as provided herein *improved spindles and all parts thereof*, the right to operate them *and the right to make, use and sell any product processed thereon*, whether or not patent protection is obtained in respect of such product) . . . without limitation of the foregoing the Licensors agree at the request of the Licensee at any time and from time to time (a) *to use their best efforts to procure for the Licensee as promptly as feasible such number of the improved spindles or parts therefor as the Licensee shall from time to time order*, all at cost to the Licensors and without any profit to

the Licensors or any charge for their services, *the cost to the Licensee per improved spindle or part to be as low as the cost to anyone else* with whom the Licensors deal at the time, and (b) at their own costs and expense to furnish the Licensee as and when requested by it with information, *advice and assistance for the proper installation, maintenance operation and use* of the improved spindles and for the practice of the invention."

Paragraph 1(a) defines the term "improved spindles" as including "a spindle, an electric heating unit, a yarn tension device and auxiliary equipment required to convert conventional up-twisting machines to enable them to produce crepe or crimped or fluffed thermalset yarns . . . ".

8. The agreement of December 15, 1952, in addition to the grant of the right to use "the invention," including the rights to make, use and sell the product of the "improved spindles," also provided in paragraph 4:

> "4. *The Licensee hereby authorizes the Licensors to procure for the Licensee 1,000 of the improved spindles for installation on frames now owned by D. W. Rich and company, Incorporated*, a New York Corporation, hereinafter called 'Rich'. *The Licensors will order* such improved spindles for the Licensee for delivery as soon as practicable *and as soon as any other improved spindles are delivered to anyone*. The Licensors estimate but cannot guarantee that the cost of such improved spindles installed will not exceed $20 *a spindle inclusive* of the heating unit and all parts. The Licensors will not actually place any order without the approval of such order by the Licensee, but such approval shall not be unreasonably withheld. The Licensee will use its best efforts to complete the installation of such improved spindles as soon as reasonably practicable without undue expense."

9. The agreement of December 15, 1952, also provided that the Licensors would assist the Licensee, (paragraph 5) with "any marketing problems" and (paragraph 6) in obtaining "a supply of nylon" from DuPont.

10. The agreement of December 15, 1952, also provided in paragraph 9 that "this license shall be an exclusive license throughout the United States," subject to stated exceptions and upon the performance of stated conditions by the Licensee, Synfoam.

11. The agreement of December 15, 1952, provided in paragraph 7 that:

> "7. Subject to the provisions of paragraph 8 [relating to more favorable terms offered to others] and all of the other provisions of this agreement, the Licensee will pay the Licensors as full compensation under this agreement *one-half of all the profits* herein described remaining after deducting therefrom the cost to the Licensee of the improved spindles theretofore installed by it and of the installation thereof."

The remainder of paragraph 7 detailed the prescribed method of calculating the "net profits" of the Licensee.

12. The agreement of December 15, 1952 also provided in paragraph 7 that the Licensors and Licensee nominated Warren A. Seem and Leo Power, respectively, as their representatives to consult "in respect of any contemplated transactions or decisions which may bear on the amount or determination of the profits of the Licensee and who shall have power to make agreements with the [other party] in respect thereof."

On February 11, 1953, Mr. Seem wrote to Mr. Power regarding the proposed installation of six false twist machines, of the Fluffon type, at the Synfoam plant in Lowell, Massachusetts.

13. The same letter from Mr. Seem to Mr. Power refers to the ordering of parts, including spindles, heating units and tension devices, for the installation of false-twist machines at Lowell. One paragraph states:

> "Knowing that the ball bearings would be the bottleneck we ordered these even before we had a signed

agreement with you. This still gave us time to make final evaluation of improvements which appeared desirable after operating 220 spindles for about one year.

We have been highly pleased with all of the equipment we have been using, and especially so with the two most essential parts of the machine, namely the spindle and the heating unit."

14. The parts ordered for the Synfoam installation were for the intended purposes of converting old textile "uptwister" frames into false twisting machines. As Mr. Stoddard testified, it was the intention that each of the six machines at Lowell, Massachusetts, would be made as much as possible like the 220 spindle machine that the Synfoam representatives had seen at Marionette Mills on May 20, 1952, and would include all of its essential elements.